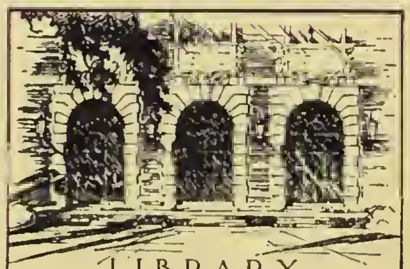

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# THE Farm Cost SITUATION

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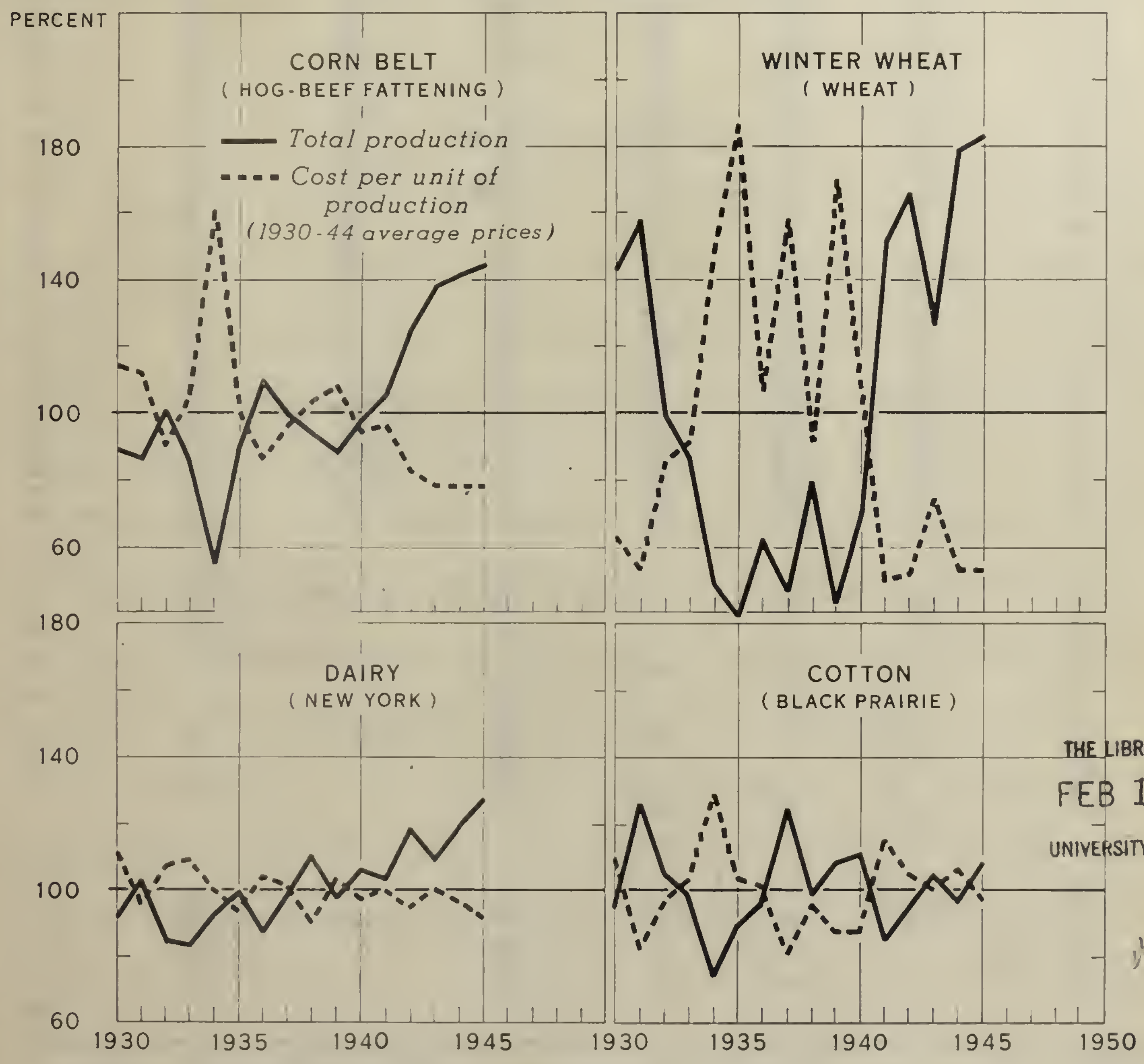
TOTAL PRODUCTION AND COST PER UNIT OF PRODUCTION, FAMILY OPERATED FARMS, BY TYPE, 1930-45
INDEX NUMBERS (1930-44 = 100)



U. S. DEPARTMENT OF AGRICULTURE NEG. 46109 BUREAU OF AGRICULTURAL ECONOMICS

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Real gains have been made in productive efficiency during the past decade. Farm operators have increased production 10 to 50 percent and reduced unit costs by almost the same amount. These gains are the result of a number of factors that have not been shared uniformly by families on all types of farms. Increased production at lower unit costs is essential to improvement in the material standard of farm living.

Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | All commodities 1/ | Farm machinery | Building material other than house | Equipment and supplies 2/ | Feed | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|
| 1910 | 77 | 66 | 68 | 91 | 86 | 99 | — | 84 |
| 1911 | 81 | 66 | 70 | 90 | 99 | 99 | — | 84 |
| 1912 | 77 | 66 | 70 | 90 | 84 | 100 | 66 | 87 |
| 1913 | 80 | 66 | 68 | 90 | 99 | 102 | 63 | 89 |
| 1914 | 78 | 66 | 63 | 89 | 94 | 100 | 64 | 87 |
| 1915 | 82 | 68 | 69 | 95 | 93 | 112 | 77 | 89 |
| 1916 | 98 | 70 | 79 | 116 | 120 | 120 | 92 | 97 |
| 1917 | 119 | 80 | 93 | 141 | 170 | 137 | 96 | 122 |
| 1918 | 137 | 102 | 109 | 163 | 179 | 170 | 125 | 153 |
| 1919 | 151 | 105 | 128 | 162 | 195 | 182 | 181 | 178 |
| 1920 | 157 | 109 | 139 | 170 | 127 | 186 | 98 | 209 |
| 1921 | 111 | 105 | 105 | 137 | 90 | 156 | 86 | 134 |
| 1922 | 109 | 93 | 107 | 126 | 114 | 129 | 84 | 130 |
| 1923 | 111 | 97 | 109 | 123 | 124 | 126 | 92 | 146 |
| 1924 | 112 | 101 | 109 | 120 | 131 | 120 | 97 | 149 |
| 1925 | 116 | 101 | 111 | 126 | 131 | 129 | 111 | 152 |
| 1926 | 115 | 101 | 109 | 130 | 127 | 126 | 138 | 154 |
| 1927 | 113 | 101 | 108 | 127 | 128 | 121 | 127 | 154 |
| 1928 | 117 | 101 | 107 | 124 | 137 | 131 | 115 | 154 |
| 1929 | 116 | 100 | 107 | 123 | 134 | 130 | 119 | 155 |
| 1930 | 111 | 100 | 105 | 118 | 122 | 126 | 112 | 144 |
| 1931 | 97 | 99 | 94 | 104 | 86 | 115 | 98 | 112 |
| 1932 | 86 | 93 | 85 | 96 | 64 | 99 | 66 | 83 |
| 1933 | 85 | 91 | 87 | 93 | 71 | 96 | 61 | 73 |
| 1934 | 97 | 95 | 99 | 98 | 98 | 104 | 90 | 82 |
| 1935 | 100 | 96 | 98 | 97 | 106 | 102 | 99 | 89 |
| 1936 | 98 | 98 | 99 | 99 | 105 | 96 | 92 | 96 |
| 1937 | 107 | 101 | 105 | 105 | 121 | 102 | 124 | 109 |
| 1938 | 98 | 104 | 100 | 103 | 85 | 100 | 102 | 108 |
| 1939 | 96 | 101 | 100 | 99 | 85 | 100 | 84 | 106 |
| 1940 | 98 | 100 | 101 | 99 | 94 | 97 | 84 | 109 |
| 1941 | 103 | 103 | 109 | 104 | 101 | 100 | 80 | 133 |
| 1942 | 117 | 108 | 120 | 114 | 125 | 111 | 123 | 173 |
| 1943 | 128 | 111 | 128 | 121 | 150 | 120 | 156 | 228 |
| 1944 | 136 | 114 | 138 | 126 | 165 | 121 | 175 | 272 |
| 1945 | 137 | 116 | 141 | 128 | 163 | 121 | 181 | 302 |
| Jan. | 137 | | | | 164 | | — | 291 |
| Feb. | 137 | | | | 165 | | 179 | |
| Mar. | 138 | 115 | 140 | 128 | 166 | 121 | 183 | |
| Apr. | 138 | | | | 165 | | 183 | 295 |
| May | 137 | | | | 163 | | 183 | |
| June | 137 | 114 | 141 | 127 | 162 | | | |
| July | 137 | | | | 162 | | | 303 |
| Aug. | 137 | | | | 162 | | | |
| Sept. | 137 | 114 | 141 | 128 | 162 | 121 | 181 | |
| Oct. | 138 | | | | 163 | | | 297 |
| Nov. | 138 | | | | 164 | | | |
| Dec. | 138 | 115 | 143 | 127 | 164 | | | |
| 1946 | | | | | | | | |
| Jan. | 138 | | | | 165 | | | 311 |
| Feb. | 139 | | | | 167 | | 186 | |
| Mar. | 139 | 116 | 144 | 128 | 168 | 122 | 191 | |
| Apr. | 140 | | | | 169 | | 191 | 312 |
| May | 146 | | | | 182 | | 192 | |
| June | 150 | 119 | 150 | 129 | 191 | | | |
| July | 159 | | | | 227 | | | 326 |

---

1/ Excluding wages.

2/ Based on prices paid by farmers for 16 items including binder twine, lead arsenate milk pails, pitchforks, gasoline for autos and trucks, motor oil, and tires, and other similar items used on farms for production.

Note:- For a list of items included in this table see "Agricultural Prices" Bureau of Agricultural Economics, April 29, 1946.

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# FARM COST SITUATION

Approved by the Outlook and Situation Board, September 20, 1946

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## General Situation

American farmers entered the post-war era on a substantially higher level of costs than obtained 5 to 7 years ago. War-born scarcities of manpower and material sent farm wage rates and feed prices soaring, pushed up prices of building materials, equipment and supplies, and consequently forced total cash production expenses upward at a rapid clip.

Farmers' out-of-pocket operating expenses mounted from something less than 6.2 billions in 1940 to nearly 11.3 billions in 1945. At the same time gross farm production increased 15 percent, leaving the outlay per unit of product nearly 60 percent above the 1940 level. Prices of production goods, particularly feed, and labor, rose sharply during the first three-quarters of 1946. Further increases are in prospect for some expense items during the balance of 1946 and at least the first part of 1947. These increases will raise still higher the overall level of farm production costs. But, farm production expenses are incurred largely to produce commodities for sale, and prices for farm products seem likely to remain at relatively high levels through 1947.

Farmers will pay higher wages and also higher prices for feeds, machinery, equipment, building materials, fertilizers, and supplies at least through early 1947 than in the year 1946. Both the availability and efficiency of farm laborers will probably be greater than during the past 3 or 4 years. Industrial activity will continue to exert an upward pressure on farm wage rates, as industrial employers will compete with farmers for workers.

Supplies of farm machinery attachments, and repair parts for next year may show little if any increase over last year as material shortages are expected to adversely influence the volume of production. Production in 1945-46 was about 5 percent below the relatively favorable output of 1944-45. Farm motortrucks, automobiles and tires are expected to be more plentiful in 1947 than in 1946. Total fertilizer supplies for the year ending June 30, 1947 are expected to be about the same as for the previous year. Supplies of building materials, however, will continue scarce. The extraordinary demands for building materials of all sorts have kept merchants from establishing inventories comparable to prewar. This is particularly true of lumber.

The 1946-47 outlook is favorable to continued heavy use of fertilizer. Increased efficiency in the manufacture and distribution of fertilizer will be favorable to still higher levels of fertilizer use in the future. Increased use in areas formerly using relatively little fertilizer can be expected.

Farm land values and rentals during the coming year are expected to average higher than for any year of record except for 1920, the peak of the World War I boom. Land values have been increasing at an average rate of one percent per month since 1941. Should farm product prices and incomes during the next year continue at or near present levels, land values and rentals are likely to continue to rise in spite of uncertainties as to longer-run price and income levels. If future developments continue to follow the post-World War I pattern, the danger of capitalizing boom time farm incomes into land values becomes serious. Farms bought largely on credit at inflated prices are likely to result in unbearable fixed costs in more normal times. High land prices represent relatively long-time high fixed investment and costs to the farmer who buys. In the same way high land rentals represent high fixed costs to the tenant, but land rentals are current rates that can be adjusted more readily to prevailing price-cost relationships.

Large surpluses of loanable funds and active competition among lenders have lowered the general level of interest rates during the past two decades. Also, most farmers are now in a relatively good financial position and can obtain loans in conservative amounts from the regular low-rate lenders. Farmers' purchases of machinery, motor vehicles, equipment, and materials will be up next year over the past few years and credit may be important in financing these purchases. While interest charges for such items are small compared to most other production costs, and cover a much shorter period than real estate mortgages, in the event of a decline in income these "fixed" costs might prove burdensome.

Generally good pasture and range conditions during the past summer have contributed materially to livestock production and to alleviating some of the stress on our feed supply. In spite of good pastures, a record corn crop, and a near record crop of oats, feed-grain supplies for the 1946-47 feed year will not be increased proportionately because carry-over of feeds at the end of the 1945-46 season was small. Wheat will not be freely available for livestock feed. Industrial demands for grains, and net exports of grains and feeds will be larger than usual. However, against this somewhat smaller total feed supply is about a 3 percent smaller number of grain-consuming livestock than were fed in the 1945-46 season. There are prospects for a 17 percent smaller pig crop this fall compared with a year ago. Numbers of chickens, horses, and probably milk cows and other cattle will also be down on January 1, 1947 compared with a year earlier.

The level of farm costs and their effect on farm incomes need to be considered in the particular setting in which typical groups of farmers operate. Few farmers produce a single commodity, rather they operate a combination of enterprises thus producing and selling several products. Some farmers raise nearly all of the feed grains and roughages necessary to feed their livestock, while others purchase from their neighbors or in the market place. High grain and roughage prices mean high gross returns to the farmer who sells, but high cash costs to the farmer who must buy. Feed costs may be higher than previously but if livestock prices are also relatively higher the income from livestock production may be favorable.

Many farmers hire little or no labor so to them higher farm wage rates do not increase cash outlays materially. About three-fourths of the total labor requirements on our American farms are met by the farm operator and members of his family. Some of this labor is effectively utilized and some of it is not, but it supplies most of the farm labor, as well as a reserve for the peak labor seasons inherent in our agricultural economy. Operator and other family labor force is a very important element in the total farm cost structure, but it is paid out of returns above other expenditures. In times of low prices and stress it gets a low return. In that way it absorbs much of the shock of hard times. But, in favorable years the return above other expenditures is much more satisfactory. Thus family and operator labor and interest on the operator's equity in the farm constitute returns to the family for their labor and for their investment rather than cash outlays—that is, income that they can use for family living or for savings.

In general terms then farmers use family labor and home raised feed in combination with other resources to produce a product for the market. Operator and unpaid family labor and home-raised feeds are non-cash costs of production, and make up well over half of total farm costs. During recent years the market rates for feed and labor have risen at a rapid rate. In July of this year feed was 261 percent and wages 302 percent of their respective rates in 1940 compared with 162 for the average of all goods and services used in production for the same period.

Then too, a very large part of farm production costs are "fixed costs" in the sense that when production is reduced, operator and family labor, land, and machinery (considered among fixed cost items) are less effectively utilized but their costs continue. A smaller volume of output has to bear the same total overhead thus raising the cost per unit of product. The net return per unit is thus smaller and the operator's earnings are reduced. Individual farmers cannot reduce output without increasing their real costs per unit.

Farmers, therefore, do not consider only the current general price or cost level. They operate a combination of enterprises, and must consider price-cost relationships in each. They can adjust some enterprises to current situations; others to only long-time situations. The farm is a home, an investment, and a place of labor. It offers many alternatives. Depending upon price-cost relationships farmers may profitably use more land, fertilizer, feed, seed, labor and other production factors or they may use less of some and more of others.

## Farm Labor

Farmers have paid much higher wage bills in the past year than they did before the war. Cash wage payments and perquisites to hired workers were 2.2 billion dollars in 1945--nearly 2.5 times the average wage bill in 1935-39--and will be more in 1946. The 1945 wage bill was the largest on record. Farm wage rates in 1945 were three times the 1935-39 level, but employment of hired workers was 17 percent less than prewar.

Wage rates in 1946 are continuing their upward trend, while employment of hired workers is slightly above that of last year. The 1946 wage bill will probably exceed the record bill of 1945, by 5 to 10 percent.

Production per worker (for all farm workers) is almost 40 percent above the prewar level. This increase in labor productivity has tended to hold down unit labor costs. The ratio of index of farm wage rates to production per worker in 1945 was 220 percent of the 1935-39 average. The index of farm wage rates was 302 percent of the 1935-39 average. (See table 1.)

While wage rates and total wage payments have increased sharply during the war years, gross farm income and prices received have also increased. Gross farm income in 1945 was 236 percent of the 1935-39 average and prices received by farmers for their products were about 190 percent of the prewar average. Costs of many important production factors other than hired labor rose less rapidly than did prices received.

Several major factors have contributed to greater productivity of farm labor in recent years. Increased mechanization of farm operations and higher crop yields, due partly to favorable weather, are among the factors that have resulted in smaller labor requirements per unit of production. Farm workers, particularly seasonal ones, have been utilized more fully during the past few years.

Although farm wage rates are now more than three times their prewar level, farmers still are experiencing difficulty in competing with industry for workers. Industrial wage rates also have risen from prewar levels. In 1945, hourly earnings of factory workers were about 67 percent higher than in 1935-39. Farm wages showed a much greater percentage increase from the prewar period, but they started from a much lower level. Farm wage rates per month without board for July, for example, averaged nearly $35.00 in 1935-39 and by 1946 had increased to $106. When farmers hired their help by the day without board, they paid an average of $1.50

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-45 inclusive

Index numbers (1935-39 = 100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates | Ratio farm wage rates to production per worker |
|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ | | |
| 1935-39 average | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 107 | 110 | 109 | 99 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 133 | 114 |
| 1942 | 95 | 94 | 99 | 122 | 128 | 173 | 135 |
| 1943 | 94 | 94 | 94 | 119 | 127 | 228 | 180 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 272 | 201 |
| 1945 | 90 | 92 | 83 | 123 | 137 | 302 | 220 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.

in 1935-39 and \$4.84 in 1946 respectively. Hourly earnings of factory workers, on the other hand, averaged \$0.61 in 1935-39 and \$1.02 in 1945.

Farm wage rates will probably average somewhat higher at least through early 1947 than in 1946. Continued high levels of employment, general business activity and cash farm income will exert an upward pressure on farm wage rates, as industrial employers and farmers compete for workers. This competition and supplies of both regular and seasonal workers will differ from area to area.

The total wage bill in agriculture probably will be higher in the coming year. But there should be an improvement in the skill and experience of workers and a further increase in farm worker efficiency.

## Farm Power and Machinery

Farmers spent about 4.3 billion dollars for the operation and maintenance of power and machinery in 1945. This amount included the total cost of using power machines, other farm machinery and equipment and also the cost of keeping farm horses and mules. 1/ Power and machinery costs for 1945 were 73 percent above the 1935-39 average, but gross farm income was 136 percent above this average. The percent farm power and machinery costs are of gross farm income in 1945 was 16 compared with 22 in the 1935-39 period. (See table 2.)

Supplies of farm machinery, attachments, and repair parts for the year ended July 1, 1947 may show little if any increase over the production of the year ended July 1, 1946 as continued material shortages are expected to adversely influence the volume of production. Production this past year (1945-46) was about 5 percent below the relatively favorable output of 1944-45, but would have been larger except for labor-management disputes in major farm machinery plants and material shortages resulting from work stoppage in allied industries. Production in the early months of last season was about the same as for the same period a year earlier, but production for the 6 months ended June 30, 1946 was materially lower than for the same period in 1945.

Further improvement in the farm motor transport situation is expected in 1947. Production of motortrucks by July 1, 1946 had reached prewar levels and is expected to be higher in 1947. Automobile production in 1947 is expected to be considerably above the 1946 production. For the last 6 months of 1946, production of automobiles should more than double the 642,000 units produced in the first half of the year.

Supplies of tires of all types are expected to be ample in 1947. The 1946 production of tires for farm implements and for most farm motortrucks is about adequate to meet current needs. Production of automobile tires in 1946 is of record proportions and should provide about 2 new tires for every automobile registered in 1946.

Prices of most items of new machinery are now higher than in 1945 and further price increases are in prospect. This is also true for important supply items and services essential for using the machines, as well as horse feed and labor costs. Thus, compared with 1945 the cost of using farm power, machinery and equipment are likely to be considerably higher in 1946 and still higher in 1947.

The most important item of power and machinery costs for the Nation as a whole is the keeping of horses and mules, which amounted to more than 35 percent of the total farm power and machinery costs in 1945. Costs of keeping horses and mules in 1945 were 42 percent above the prewar average, largely because of the greatly increased feed prices and farm wage rates, and notwithstanding a 22 percent decline in horse and mule numbers. Per-head costs in 1945 were more than 80 percent above the prewar average and were almost double the 1940-41 average. (See table 3.) Colt crops have been small in recent years, and further reductions in numbers of horses and mules are in prospect.

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1/ This estimate is based on prevailing farm values for horse and mule feed and other items supplied by the farm including wages for labor used in the care of work animals, current prices for items purchased, and current charges for services hired.

Table 2.- Estimated total cost of using farm machinery and of keeping horses and mules, United States, 1935-39 average and 1940-45

Index numbers (1935-39 = 100)

| Calendar year or period | Horses and mules all ages | | Tractors | | Automobiles and motortrucks | | All machinery and equipment other than tractors and motor vehicles | | All farm power machinery and equipment | | | Gross farm income | Ratio of total cost of farm power and machinery to gross farm income |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Cost of use | | | |
| | Number on farms | Cost of maintenance 1/ | Number on farms | Cost of use 2/ | Number on farms | Cost of use 2/ | Quantity on farms 3/ | Cost of use 2/ | Volume on farms 3/ | Total | Percent of gross farm income | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 22 | 100 | 100 |
| 1940 | 92 | 82 | 124 | 126 | 107 | 111 | 119 | 115 | 105 | 102 | 21 | 105 | 97 |
| 1941 | 90 | 83 | 134 | 144 | 110 | 124 | 119 | 126 | 106 | 110 | 19 | 132 | 84 |
| 1942 | 87 | 100 | 148 | 165 | 116 | 138 | 129 | 147 | 111 | 128 | 16 | 177 | 72 |
| 1943 | 85 | 117 | 154 | 179 | 111 | 145 | 143 | 171 | 114 | 144 | 15 | 219 | 66 |
| 1944 | 81 | 141 | 157 | 198 | 106 | 157 | 145 | 191 | 112 | 163 | 16 | 229 | 71 |
| 1945 4/ | 78 | 142 | 167 | 216 | 106 | 166 | 160 | 212 | 115 | 173 | 16 | 236 | 73 |

1/ Based on prevailing prices, rates and value for feed, chore labor, depreciation, veterinary and horseshoeing expense, and including charges for stabling, taxes and insurance, etc.

2/ Operation and maintenance includes fuel, lubricants, tire costs, repair parts, services hired, costs for farm labor used for servicing machines, taxes, insurance, interest and depreciation charges based on current values, and housing costs. Prior to 1942 only 40 percent of the total cost of automobile expense was charged to the farm business and 50 percent since 1941

3/ Value in terms of 1935-39 average prices.

4/ Preliminary estimates.

Table 3.- Cost per unit for farm power and machinery and related data 1935-39 average and 1940-45 inclusive

Index numbers (1935-39 average = 100)

| Calendar year or period | Cost per head of keeping horses and mules | Use cost per Tractor | Use cost per Automobile and motor truck | Per unit of all other farm machinery | Prices received by farmers |
|---|---|---|---|---|---|
| 1935-39 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 89 | 102 | 104 | 97 | 93 |
| 1941 | 92 | 107 | 113 | 106 | 116 |
| 1942 | 115 | 111 | 119 | 114 | 149 |
| 1943 | 138 | 116 | 131 | 120 | 179 |
| 1944 | 174 | 126 | 148 | 132 | 182 |
| 1945 | 182 | 129 | 157 | 133 | 189 |

Total tractor operating costs in 1945 were more than 100 percent above the prewar average but there were also 67 percent more tractors in 1945. The operating cost per tractor in 1945 was only about 30 percent above the prewar average. Costs of using farm automobiles and motortrucks in 1945 were 66 percent above the prewar average. Owing to wartime restrictions, farmers purchased few new automobiles and motortrucks from 1942 to 1945. Although 1945 numbers were 6 percent above the average of the prewar period, they were less than for any year from 1940-43 inclusive. Cost per unit of operating motortrucks and automobiles in 1945 was about 57 percent above the prewar average. Costs of operating farm tractors, trucks, and automobiles in 1946 are expected to be about 15 percent higher than in 1945. A further increase of about 15 percent over 1946 is expected in 1947.

The costs of using all farm machinery and equipment other than tractors, trucks, and automobiles in 1945 was more than double the prewar average but there were 60 percent more machines. Per-unit costs of using this other machinery in 1945 were only 33 percent above the prewar average. Costs of operating machinery in 1946 will be about 15 percent higher than a year ago.

Although machinery costs have increased since 1940, the increases per unit have been less than the increases in wage rates and costs of keeping horses and mules. This additional advantage of machines and mechanical power over hand work and animal power has made the substitution of new machine methods for the older established man-horse methods more profitable than in the prewar period. Greater production, increased production efficiencies, and higher prices have provided larger farm incomes and the means for expanding the purchase and use of machines.

## Feeds

Following the lapse of price controls on July 1, 1946 costs of many feeds at important markets advanced sharply. Even though many livestock prices also increased, the livestock feed-grain price ratios since July 1 have been generally more unfavorable for feeding than they were before July 1. However, a record feed-grain crop is in prospect this fall and hay, forage and pasture supplies are generally adequate. Feed-grain prices are below July peaks and should be still lower as more new corn becomes available. With livestock prices at or near September levels, most livestock feed-grain price ratios are likely to be moderately favorable for increased feeding in 1946-47. (See table 4 and figures 1 and 2.)

Feed prices during the war years have been much above the long-time average. The price of corn received by farmers has averaged $1.07 from 1942 to 1945 compared with 69 cents in the 20 years from 1922 to 1941. Comparable prices for oats are 64 cents and 36 cents. Hay also was much above average. The index of all feed grains and hay for the same periods was 154 and 103 based on 1935-39 = 100. Thus the prices received by farmers for feeds during the war was about 50 percent above average and much higher than in any year since 1920. From the longer viewpoint, prices of feed grains will probably move downward from wartime levels, reflecting a more normal demand and also the long-time effect of technological improvements in feed-grain production.

To farmers who sell feed grains, hay and other forage, feed is a direct source of income, but other farmers buy feeds, and home-raised feed is also a cost item in livestock production. In fact, feed is the most important cost item in the production of all kinds of livestock and livestock products. Valued mostly at market prices, it normally accounts for about one-half the total cost of producing milk, eggs or a beef calf and three-fourths or more of the cost of a hog. Grain and other concentrates make up nearly all the feed costs for poultry and hogs, but less than 40 percent of the total feed cost of the average dairy cow and still less of cattle and sheep. When livestock prices are high relative to grain prices, more grain is fed, production of milk or eggs is increased, and hogs are fattened to heavier weights. In contrast, when feed prices are relatively higher, less grain is fed and livestock production is reduced.

With a record corn crop and a near-record crop of oats, feed grain production will set a new high in 1946. However, supplies will not be increased proportionately because the carryover of feed grains at the end of the 1945-46 season was small. In addition, wheat will not be freely available for livestock feed, because exports and food demands place a heavy burden on the record wheat crop and the carryover was very low.

Table 4.– Relation of supply of feed to number of livestock and to prices of feed and livestock, 1927-46

Index numbers (1935-39 = 100)

| Year | Livestock and livestock product prices 1/ | Feed grains and hay prices 1/ | Supply of feed concentrates available for feed 2/ | Animal units of grain consuming livestock fed in year 3/ |
|---|---|---|---|---|
| 1927 | 127 | 121 | 105 | 110 |
| 1928 | 136 | 130 | 103 | 111 |
| 1929 | 138 | 126 | 106 | 110 |
| 1930 | 117 | 113 | 103 | 111 |
| 1931 | 85 | 78 | 96 | 110 |
| 1932 | 63 | 51 | 106 | 113 |
| 1933 | 62 | 60 | 119 | 115 |
| 1934 | 72 | 100 | 98 | 111 |
| 1935 | 99 | 113 | 68 | 95 |
| 1936 | 103 | 108 | 97 | 100 |
| 1937 | 109 | 132 | 74 | 99 |
| 1938 | 97 | 75 | 101 | 99 |
| 1939 | 93 | 73 | 111 | 107 |
| 1940 | 96 | 86 | 116 | 113 |
| 1941 | 120 | 94 | 120 | 112 |
| 1942 | 148 | 117 | 128 | 120 |
| 1943 | 172 | 155 | 150 | 138 |
| 1944 | 166 | 175 | 141 | 137 |
| 1945 | 174 | 170 | 135 | 124 |
| 1946 |  |  | 136 | 120 |
|  | Jan. 174 | 172 |  |  |
|  | Feb. 173 | 175 |  |  |
|  | Mar. 174 | 180 |  |  |
|  | Apr. 175 | 180 |  |  |
|  | May 177 | 198 |  |  |
|  | June 182 | 205 |  |  |
|  | July 211 | 257 |  |  |
|  | Aug. 225 | 237 |  |  |
| 1947 |  |  | 137 |  |

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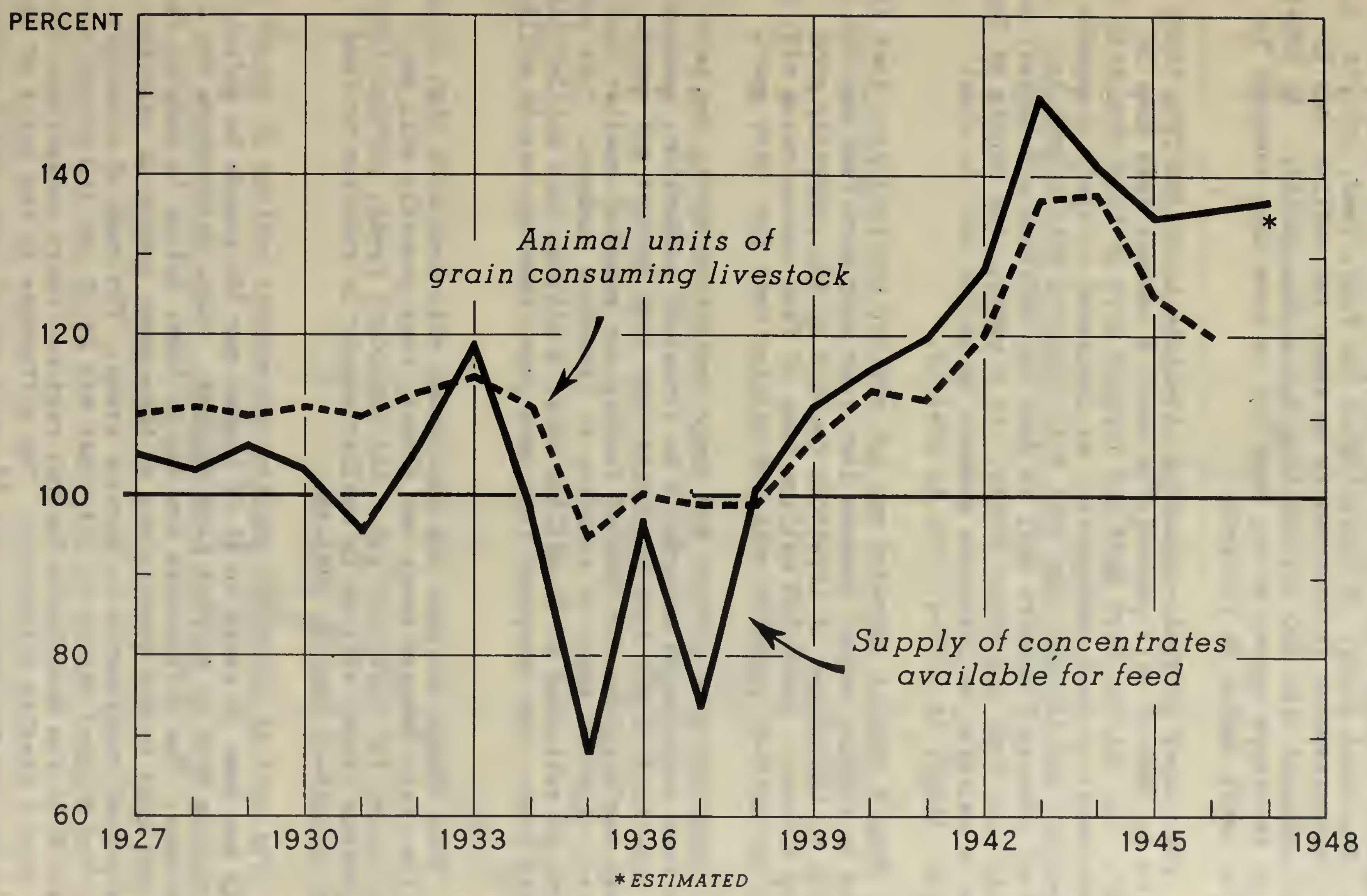
1/ Calendar year.

2/ Supply for year beginning preceding October.

3/ Animal units fed in year beginning preceding October.

## RELATION OF CONCENTRATE FEED SUPPLY TO NUMBER OF GRAIN CONSUMING ANIMALS, UNITED STATES

### INDEX NUMBERS (1935-39=100)



U. S. DEPARTMENT OF AGRICULTURE NEG. 46110 BUREAU OF AGRICULTURAL ECONOMICS

FIGURE I

In general numbers of grain consuming livestock tend to adjust to the feed supply. The supply of concentrates has been larger in relation to the number of livestock since 1938, but more livestock product per animal has been produced.

Supplies of byproduct feeds probably will be larger in 1946-47 than a year earlier. Net exports of feeds will be large and the demands and requirements of grains for industrial purposes will be larger than usual. The total supply of concentrates for feed, seed, exports, industry, and carryover is expected to be about 162 million tons in 1946-47 compared with 160 million tons for a year earlier. In brief, large as the crops appear to be, they are no more than adequate to meet the heavy demand in prospect.

The number of grain-consuming livestock to be fed from these supplies in 1946-47 will probably be about 3 percent less than in 1945-46. Hog raisers have made the largest part of this reduction from the standpoint of feed consumption, as indicated by their prospects for a 17 percent smaller pig crop this fall compared with a year ago. In addition, January 1 numbers will be down for chickens and horses, and probably milk cows and other cattle. As a result, the supply of feed grains in relation to livestock numbers to be fed will be about 4 percent larger in 1946-47 than in 1945-46.

This 4 percent increase may not reflect the full gain that there will be in feeding values because last year much more feed was fed in relation to the number of livestock because of the generally poor quality of corn. About 126 million tons of feed concentrates will be needed for 1946-47 compared with 136 million tons fed last year.

Generally good pasture and range conditions during the past summer have contributed materially to livestock production, because about one-third of all feed nutrients come from pasture and range. Although hay supplies for 1946-47 feeding are somewhat smaller than a year ago, they are ample in relation to livestock numbers. This year's hay crop is estimated at 96 million tons, 9 million tons smaller than the 1945 crop. The carryover from last year, however, was 16 million tons.

Even though dairymen and poultrymen will need less high protein feeds for their reduced herds and flocks, they probably will pay higher prices for what they get. All byproduct feeds, particularly high protein feeds, will be in smaller supply in relation to feed grains in 1946-47 than in 1945-46.

The cost of dairy and poultry concentrate rations in recent years usually has been 50 cents to $1.00 higher per 100 pounds in deficit feed regions than in surplus feed regions. These differences are likely to continue. The differences are due to lower prices in surplus feed areas and also to the greater use of home-grown grains in relation to higher priced supplements in surplus areas. The cost of a poultry ration in the New England States in July 1946 was $4.61 per 100 pounds compared with $3.56 in the West North Central region. Dairy concentrate ration costs show a similar difference. The difference in the price of laying mash in the two regions was only 33 cents and of bran only 2 cents per 100 pounds.

# RELATION OF PRICE OF FEEDS TO LIVESTOCK PRICES, 1927-46

## INDEX NUMBERS (1935-39=100)

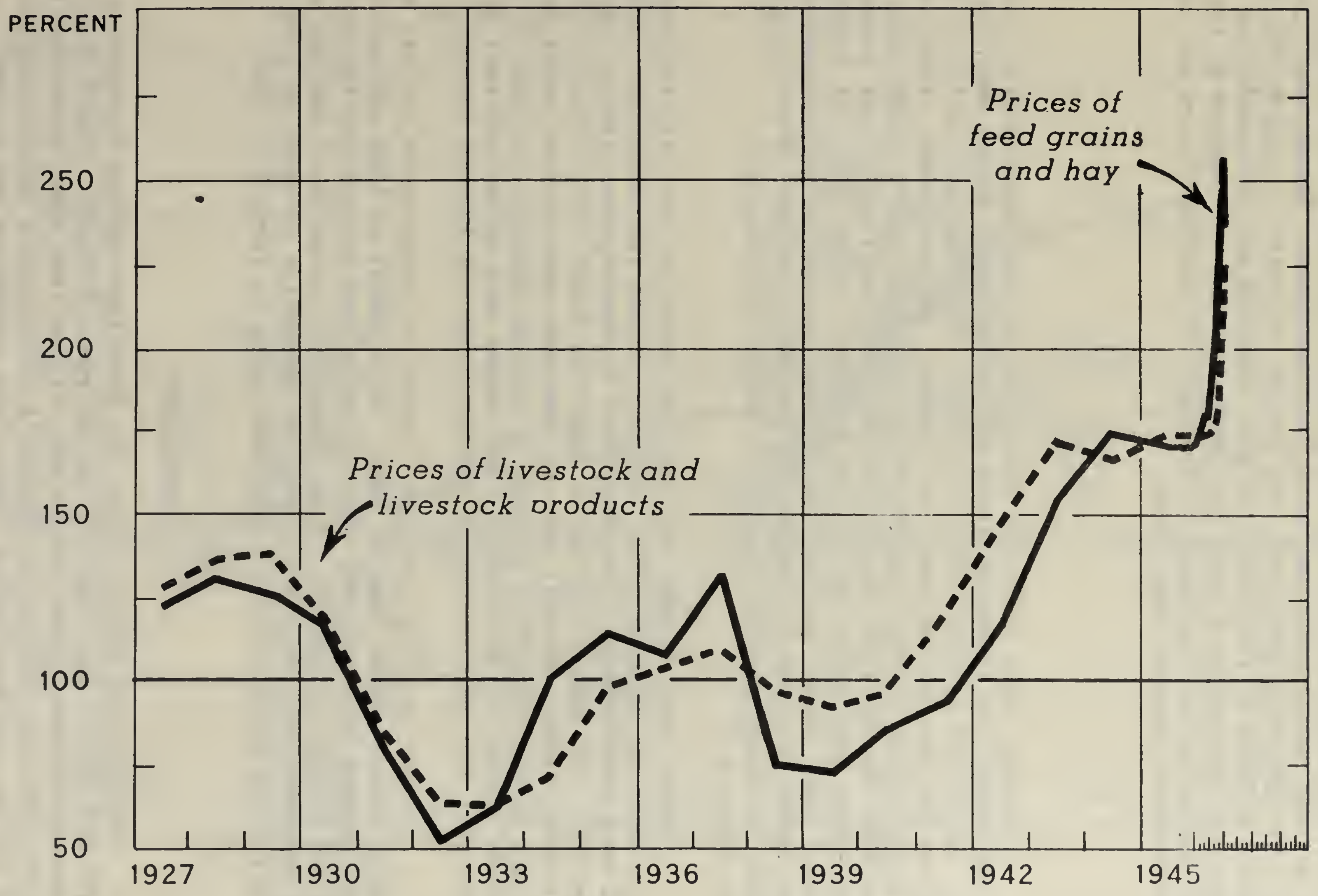


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FIGURE 2

Prices of livestock and livestock products tend to keep in line with feed prices over the long run.

The long-time trend will probably be toward lower cost per unit of feed nutrients for livestock. Improved methods of hay harvesting and storage reduce labor and save feed nutrients. Liming, fertilizing, and other improved practices, and better varieties of plants will have similar effects on pastures. As much progress may be expected in the increased production of feed nutrients from hay and pasture in the next decade as has been made in the past 10 years with corn and oats, thus further reducing feed costs.

## Seed

Farmers' seed costs are influenced by seed supplies, by changes in the demand for different kinds and varieties of seeds, both old and new, and by the general level of prices. Supplies are made up of production for the current year, net imports, and carryover. Seed costs in general tend to vary inversely with previous year's production. From 1938 through 1941, production was relatively high, high enough to hold prices well below the 1935-39 average. After 1941, the higher general price levels and wartime demands, particularly from countries where production was interrupted by the War, resulted in much higher prices for seeds despite the higher levels of production. (See figure 3.)

Prices that farmers will pay for seeds in 1947 will be slightly above those of 1945 and 1946. However, prices for individual kinds will vary considerably. The supply of northern-grown alfalfa, Kentucky bluegrass, and some varieties of vegetable seeds will be shorter than most other seeds. We will have to draw more heavily than usual on the current year's production because of smaller stocks. On June 30, 1946, dealers' stocks of 34 kinds of field seeds were 43 percent smaller than those of a year earlier and 16 percent below the 1940-44 average.

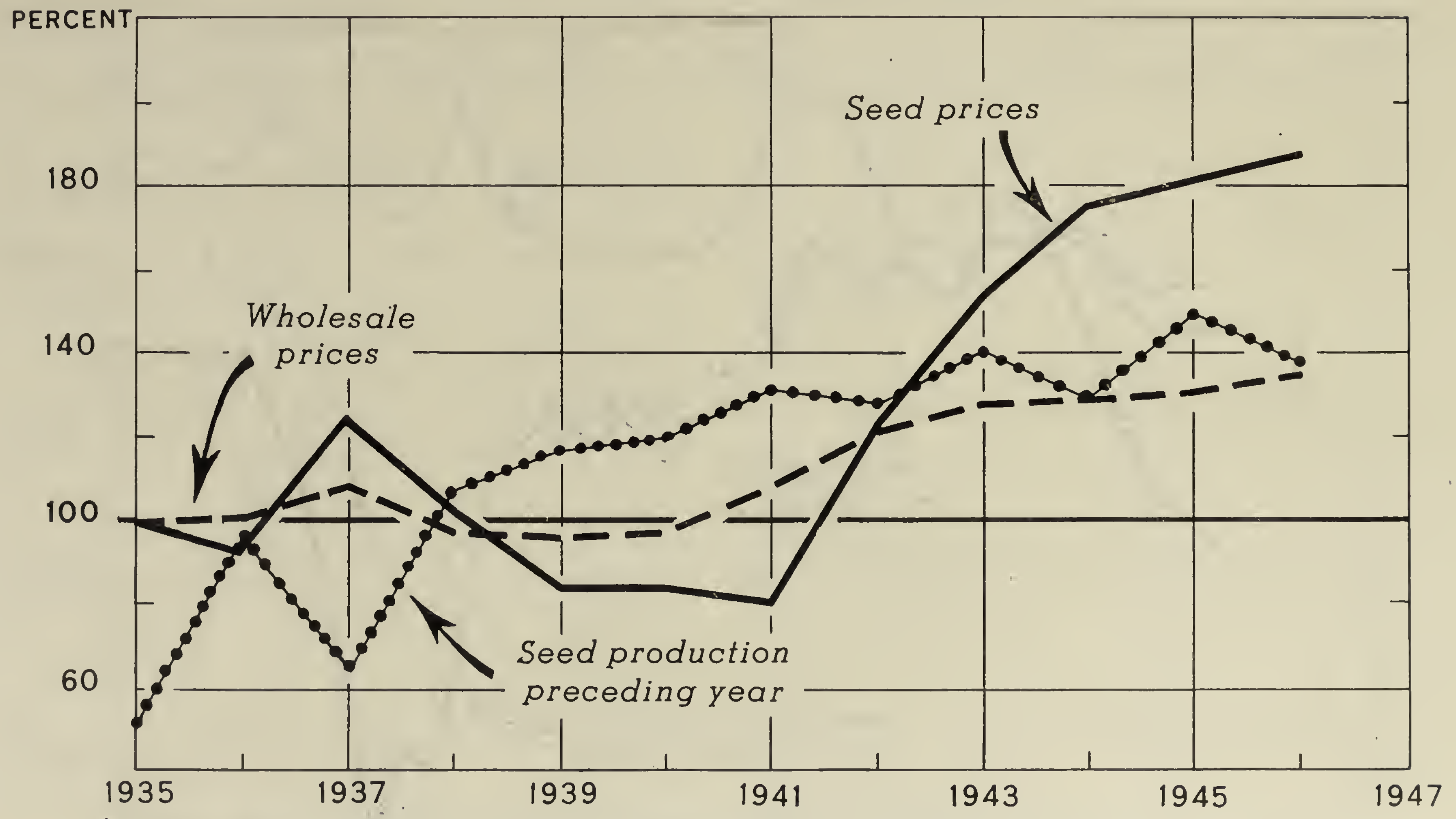
Production of 14 principal legume and grass seeds in 1945 was about 7 percent lower than in 1944. As a result of this smaller production, farmers paid more for seed in early 1946 and dealers had much smaller stocks by June 30. Thus, largely as a result of smaller stocks the expected relatively high level of production of seeds in 1946 is not likely to be sufficient to lower seed costs to farmers in 1947.

## Fertilizer

Farmers paid higher prices for fertilizer during the last 3 years of the war period than they did in the years 1939-40. (See figure 4.) Farmers paid these higher prices and, at the same time, increased their use of fertilizer because of favorable farm product price-fertilizer cost ratios, and anticipated higher farm production and incomes.

## PRICE PAID BY FARMERS FOR ALL SEEDS, PRODUCTION OF SELECTED GRASS SEEDS* IN THE PRECEDING YEAR, AND WHOLESALE PRICES OF ALL COMMODITIES, UNITED STATES, 1935-46

### INDEX NUMBERS (1935-39=100)



* ALFALFA, RED, ALSIKE, SWEET AND CHIMSON CLOVERS, LESPEDEZA, AUSTRIAN WINTER PEAS, ALL VETCH, COMMON RYE GRASS, TIMOTHY, REDTOP, KENTUCKY BLUEGRASS, ORCHARD GRASS AND SUDAN GRASS

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FIGURE 3

Seed prices and production are both at considerably higher levels than in 1935-39, but prices in recent years have been higher in proportion to production than during the prewar period.

## RETAIL PRICES OF FERTILIZER, PRICES PER UNIT OF PLANT NUTRIENTS, AND RATIO OF PRICES RECEIVED BY FARMERS TO PRICES PAID PER UNIT OF PLANT NUTRIENTS, UNITED STATES, 1910-45

INDEX NUMBERS (1935-39=100)

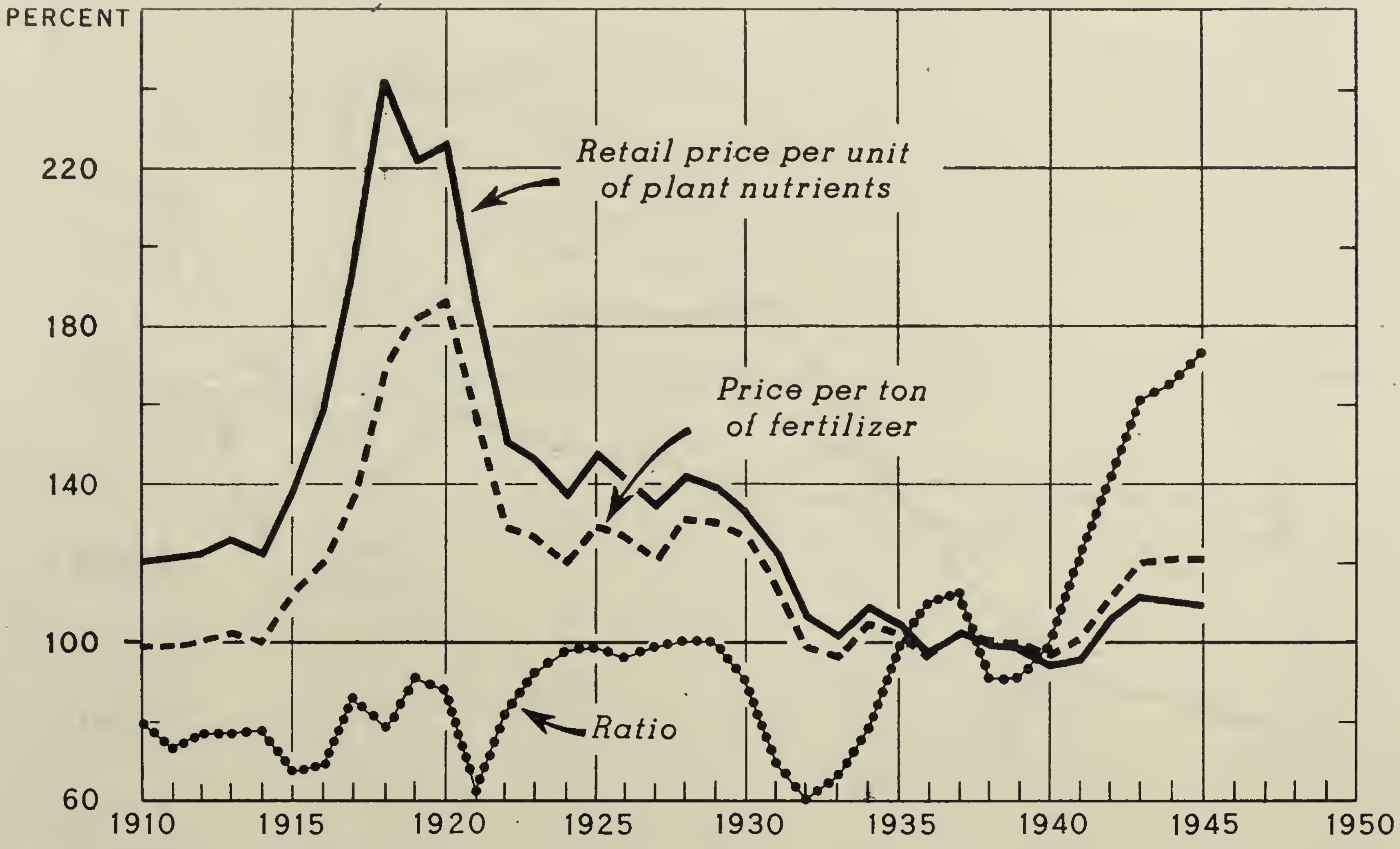

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FIGURE 4

Fertilizer prices have been about 20 percent higher since 1942 than in 1935-39, but about 5 percent below those prevailing during the 5-year period 1925-29, the most recent period of relative stability. The cost situation in terms of plant nutrients is even better; farmers' dollars will now buy relatively more plant nutrients in fertilizers than at any time in history.

Supplies of total plant nutrients for the year ending June 30, 1947 are expected to be slightly larger than for the previous year. The upward trend in fertilizer consumption has been relatively stronger in the areas formerly using little fertilizer, particularly the Corn Belt and Lake States, than in the areas where use of fertilizers has been rather common for some time. The distribution of supplies in 1946-47 will probably reflect a continuation of this trend. While the 1946-47 outlook is favorable to continued heavy use of fertilizer, the longer range situation will depend considerably on the continuance of a more favorable farm product price-fertilizer cost ratio than prevailed prior to 1941.

Since 1941 prices received by farmers for all commodities for the country as a whole have been relatively higher than prices paid by farmers per unit of plant nutrients in fertilizer. This situation will likely prevail in 1947.

Prior to 1941 this relationship was less favorable. In fact, with the exceptions of 1936 and 1937, the ratio of prices received by farmers to prices paid for fertilizer plant nutrients (1935-39 = 100) never exceeded 100 from 1910 to 1941. Use of higher analysis fertilizer in more recent years has been a factor in making the ratio of farm product prices to prices per unit of plant nutrients more favorable. However, the war-time rise in prices of farm products has been a much more important factor. The general price-control program has also been important in making favorable farm product price-fertilizer cost relationships during the war years.

Regional variations in fertilizer costs reflect the influence of differences in analyses of fertilizer used and in distance from points of manufacture. For example, high analysis fertilizers are used in the Mountain States, while the lower grades are generally used in the South. In the Mountain States the higher grades used tend to hold down prices per unit of plant nutrients relative to the United States average while greater distances and higher shipping costs to those States tend to increase costs.

With a continued trend toward increased efficiency in the manufacture and distribution of fertilizer, it appears that the situation will be favorable for still higher levels of fertilizer use in the future. Certainly the situation should be favorable for 1947. If present trends toward wider use of fertilizer to support more stable systems of farming are continued, or accelerated, demand for fertilizer in the future may be less dependent on export crops, primarily cotton and tobacco, than it has been in the past. More stable farming systems and systems that include more feed crops and livestock in areas that have been heavy users of fertilizer should not decrease total fertilizer consumption, but rather should sustain high demands for fertilizer. Future demand for fertilizer will also be influenced by consumption in areas that have previously used relatively small quantities. Wartime consumption of plant nutrients in the North Central, Northeastern and Western States combined was nearly two and one-half times that in the prewar period. The percentage of the United States total consumption occurring in these States likewise rose from less than one-third to more than two-fifths. These States accounted for half of the total increase. Wartime consumption of plant nutrients in the older and heavier using areas rose about 70 percent over prewar levels.

There is still need for considerable capital investment in soil improvements such as additions of phosphate and potash, particularly to soils in the humid sections of the country.

## Lumber, Containers, and Farm Supplies

The demand for lumber, containers, and farm supplies continues high relative to production and supplies. Although the production of lumber is increasing and is expected to expand further in 1947, the Veteran's Emergency Housing Program will probably use a large percentage of both lumber and some other building materials. As a result of these relatively high requirements, priority authorizations for use of some construction materials probably will continue into 1947.

The extraordinary demands for lumber have kept rural yards from establishing inventories comparable to prewar. Although agricultural production in 1947 will probably not be seriously hampered because of lack of lumber, much new farm construction may be postponed until supplies improve.

Container shortages may be eased slightly compared with 1946, but continued conservation and salvage should be planned. Wooden containers, though generally more available, may continue somewhat below requirements in 1947. Tin cans, paper, open mesh and cotton bag supplies should be adequate to meet essential needs.

Most merchant trade products (barbed and woven wire fencing, nails, staples, bale ties, metal roofing and siding, and pipe) have been in short supply for the first half of the year because the steel and coal strikes slowed down manufacture and also because of very high demand. Nails and bale ties probably have been in shortest supply. If the steel mills operate without interruption for the next few months, practically all merchant trade products should be produced at a rate that will meet farm requirements for the remainder of this year and into 1947.

Costs of lumber, containers, and farm supplies were higher in the latter part of 1946 than in the first half of the year, and are expected to be somewhat higher in 1947 than at present. The July 15 index of prices paid by farmers for commodities used in production was 159. (See inside cover page.) This is up 9 points in a single month and up 21 points from January 15. One of the sharpest rises was in materials for building farm structures other than houses, such as drop-siding, barn windows, roofing, metal and wooden fence posts, barbed wire and poultry netting.

## Insecticides and Fungicides

Farmers' costs of insecticides and fungicides are affected by the general level of prices and costs and by available supplies in relation to demand for these products. Except for nicotine compounds and possibly rotenone, supplies probably will continue to be adequate at existing prices. Increasing retail distribution costs of these materials may tend to offset the effect of increased supplies so that costs to farmers in 1947 may continue near current levels. Variations in costs of individual items are expected. Even during the war, when supplies were curtailed, the farmers' cost index of pesticides rose faster than did wholesale prices.

During the coming year, supplies should be adequate of arsenicals and copper chemicals, pyrethrum, synthetic compounds, such as DDT and thiocyanates, and fluorine compounds, such as cryolite, sodium fluoride, and sodium fluosilicate. The same is true for all insect and soil fumigants (with the possible exception of napthalene and para dichlorobenzene) and for sulphur, dust dilutents, and petroleum insecticide carriers. With the resumption of rotenone imports from the Far East supplies of rotenone should be adequate to meet needs for the next year.

## Land Values and Rentals

Farm land values and rentals during the coming year are expected to average higher than for any year of record except for 1920, the peak of the post World War I boom. Outlays for the purchase of farm land are of considerable importance to the prospective buyer and also to the owner. Investment in land and buildings represents about 60 to 85 percent of the total capital (including real estate, machinery, equipment, livestock, and supplies) in most farms. Farms bought at high land prices represent high fixed costs to the farmer. High land rentals represent high fixed costs to the tenant, but land rentals are current rates that can be adjusted more readily to prevailing prices and costs.

Land values have been increasing steadily at an average rate of one percent per month since 1941. During the year ended July 1, 1946, the increase was 13 percent, bringing the United States index (1912-14 = 100) to 147; 73 percent above 1941 and only 14 percent below the 1920 inflationary peak. (See figure 5.) Average values as of July 1 were above 1920 levels in 3 geographic divisions and within one percent of 1920 in 2 other divisions. (See table 5.)

The principal forces that have influenced the farm land market in recent years and are likely to continue during the coming year include: a relatively high level of both farm product prices and income, a favorable current rate of return on land investments, easy credit, and a huge volume of liquid funds available for land purchase.

Table 5.- Farm real estate: Index numbers of estimated average value per acre, 1920 and 1946, with selected comparisons 1/

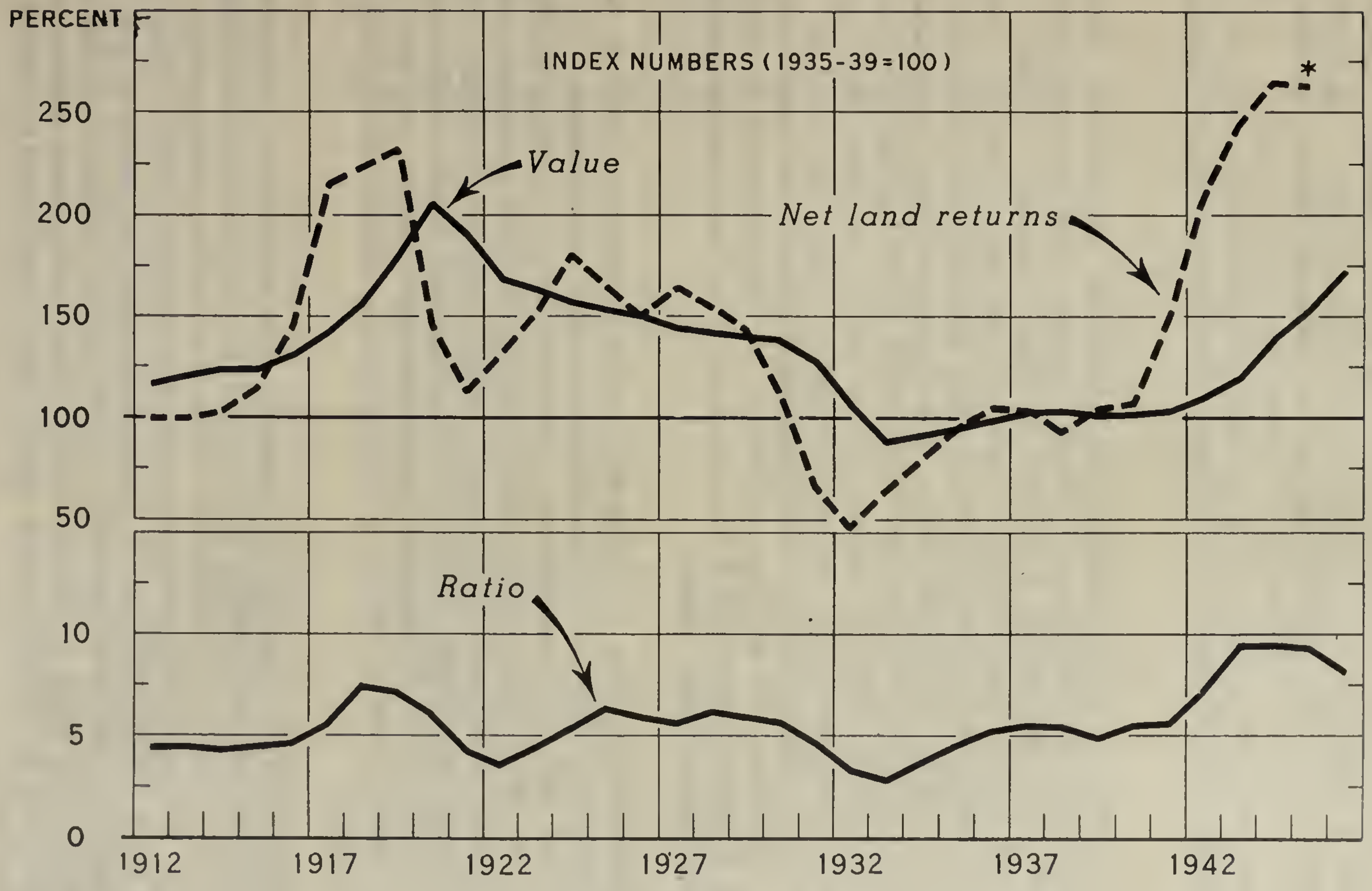
| Geographic divisions | Index numbers 1912-14 = 100 | | | Increase | | | Ratio |
|---|---|---|---|---|---|---|---|
| | 1920 | 1946 | | 1915 to 1920 | 1941 to 1946 | 1945 to 1946 | July, 1946 to 1920 |
| | | March | July | | | | |
| | | | | Percent | Percent | Percent | Percent |
| United States | 170 | 142 | 147 | 65 | 67 | 13 | 86 |
| New England | 140 | 140 | 142 | 41 | 31 | 8 | 101 |
| Middle Atlantic | 136 | 128 | 134 | 36 | 41 | 8 | 99 |
| East North Central | 161 | 134 | 138 | 55 | 68 | 13 | 86 |
| West North Central | 184 | 106 | 110 | 75 | 63 | 10 | 60 |
| South Atlantic | 198 | 189 | 197 | 102 | 72 | 14 | 99 |
| East South Central | 199 | 212 | 218 | 101 | 84 | 18 | 110 |
| West South Central | 177 | 154 | 158 | 77 | 56 | 11 | 89 |
| Mountain | 151 | 134 | 139 | 54 | 72 | 12 | 92 |
| Pacific | 156 | 194 | 204 | 46 | 78 | 13 | 131 |

1/ Farm land with improvements as of March 1, except where otherwise indicated.

If farm product prices during the next year continue at or near present levels, land values and rentals will likely continue to rise in spite of the uncertainties as to longer-run price and income levels. Expectations of lower farm product prices and income levels along with a recollection of the collapse in land values and lower land rentals that followed the World War I boom have had a tempering effect on land prices. As it is likely that these value-curbing influences will only partially offset strong inflationary forces, the peak in farm land prices probably has not been reached.

For the country as a whole, an increase of 10 percent or more in land values with a somewhat smaller increase in rentals may be expected during the year ahead. This would be only a continuation of the upward trend of the last 5 years and it would be far short of the 21 percent rise in values that occurred during 1919-20. Any widespread speculative boom would accelerate the increase. Such a boom seems improbable in view of the substantial number of farmers expecting lower land values in the years ahead and a general recollection of the hardships and privations that followed the World War I land boom.

Although a further rise in land prices and rentals is in prospect, it appears that current land prices and rentals in many areas are already above levels likely to be maintained. Hence, any further increases will make considerably more difficult the adjustments necessary to more usual operation.



FARM REAL ESTATE: NET LAND RETURNS AND VALUE PER ACRE, AND RATIO OF RETURNS TO VALUE, UNITED STATES, 1912-46

*PRELIMINARY

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FIGURE 5

Net land returns per acre during the past 3 years have been significantly higher than the World War I peak reached in 1919 although the levels of return before both World Wars were approximately the same. Starting from lower levels, average values during the current war period have now increased about as much as during the World War I period. The ratio of returns to value decreased during the last 2 years as a result of values rising faster than net returns although the level is still higher than for any year since before this war period.

## Interest, Taxes, and Insurance

Interest - The continued decline in total farm-mortgage-interest charges which has been under way since 1922 appears to be at an end. Interest costs probably will level out or increase slightly next year. While the farm-mortgage debt declined 3.6 percent during 1945, farmers' reductions of this debt were slowing up as indicated by declines of 6.5 percent in 1944 and 8 percent in 1943. Furthermore, in 1945, 20 States showed an increase in debt, compared with only 8 States the year before. In many instances, farmers may use less money to pay off debts and more to purchase new equipment and repair buildings as more materials become available.

Evidently interest rates charged by different lenders on farm-mortgage debt, are not increasing. However, since 1944 the average farm mortgage interest rate has shown a slight increase because of the elimination of the subsidized interest rate of the major Federal lending agencies and also because higher interest rate lenders are getting a larger proportion of the mortgage debt. The farm-mortgage debt held by commercial banks, individuals, and certain other private lenders increased about 95 million dollars during 1945, while the debt held by the Federal land banks decreased 130 million dollars; that held by the Federal Farm Mortgage Corporation, 100 million dollars; and that held by life insurance companies, 50 million dollars. A continuation of this shift could mean a higher average interest rate for the total mortgage debt in the years immediately ahead.

A more significant rise in interest costs during the coming year may occur in connection with non-real estate credit. Increased expenditures for automobiles, machinery, tractors, and building materials at higher prices and on higher credit rates will further increase debt charges. The various creditors will make loans at about the same rates, but to finance larger purchases farmers will increase their debts with such creditors as dealers and finance companies whose rates are considerably higher than those of banks and production credit associations, the more usual lenders.

Notwithstanding the expected increases, the cost rates of both mortgage and non-real estate credit will still be relatively low compared to prewar. Large surpluses of loanable funds and active competition among lenders have reduced interest rates during recent years. Also, most farmers are in a relatively good financial position and can get loans from the regular low-rate lenders. Even though interest charges will continue small this year compared with other production costs, in the event of a decline in income these costs which are largely fixed might prove burdensome.

Taxes - Property-tax payments made by farmers in 1947 probably will be up somewhat from those for 1946. Property taxes are responding to upward pressures after fluctuating very narrowly for 10 years. Revenue needs of local governments have increased substantially during the past few years, and property taxes are their major source of operating funds. Higher salaries and wage rates, increased services and facilities, and increased prices of materials have placed greater demands and higher costs on local governments. Despite the availability of revenue from State aids and shared taxes, a significant part of these increased costs must be met by property levies. The 1945 levies on farm real estate, payable largely late in 1945 and early in 1946, were more than 10 percent higher than those of 1944. A further rise is expected in 1946.

Insurance - The increase in valuation of farm buildings and equipment, and the wide gaps between insured value and replacement costs that now exist on many farms, will undoubtedly cause many farmers to obtain more insurance, particularly where policies are coming up for renewal. Insurance on farm property is generally for a 5-year or a 3-year period, with premiums, payable in advance and based on 75 percent of value at time of the contract. This means that insurance costs (premium outlays) will increase in total amount, perhaps by not more than 5 percent. Costs per $100 of insurance may decrease slightly, largely as a result of lower unit overhead costs and reduced casualties through improved structures and protection facilities.

## Changes in Farm Production Costs

Production costs on all kinds of farms the country over have moved steadily upward during the past several years. But the effects of sharply higher prices for feed, labor, machinery and other production items on farm production costs differ materially among farms and farming areas, depending upon the production methods and the crops and livestock grown. Some of the important aspects of the cost situation from a farm unit basis are illustrated by comparing the trends since 1930 in costs per unit of production on 14 important types of farms. The unit costs relate to the entire farm production of the great body of family-operated farms of the respective type, and not to individual commodities produced on these farms.

The index of operating expense (figure 6) measures the combined effect of changes in the quantities and prices of cash cost goods used, and in the volume of production obtained by their use..

Characteristic differences in the composition of production expenses on farms of various types and in the expansion in production per farm largely account for the varying rates of increases in costs per unit of product during the War period. Feed prices and wage rates rose much faster than did prices for other cost items. Cash costs have consequently risen fastest on those farms using considerable purchased feed and hired labor.

Mechanization has also played an important role in influencing the pattern of cash cost changes. Farmers who had or could mechanize most of their operations were able to hold down expenses per unit of product by expanding production thereby making better use of their labor, power, and equipment. On farms where increased production required an almost equal increase in labor or feed, out-of-pocket costs per unit pushed up relatively faster than on other farms.

Present and future levels of cash costs of production will have an important bearing on the future earnings of farm families. These operating expenses (cash costs) together with rent paid take up less than half the total value of production on most family-operated farms. The rest of the value of production goes to the operator and his family as return for their labor and for their investment in the farm business.

Prices of the things farmers buy historically are quite inflexible. When foreign relief tapers off, farm product prices may resume a less favorable relationship to those for other goods and services. Farmers' earnings will reflect any unfavorable price change unless production costs can be reduced substantially through increased efficiency. Farmer's earnings can be protected from unfavorable price developments to the extent that cost reduction can offset price declines.

Other aspects of the cost situation on these 14 types of farms are illustrated in figure 7. The series of unit costs based on 1930-44 average prices reflect changes in the aggregate quantity of labor, land and other resources required per unit of total production. Downward trends indicate improvements in production efficiency. They indicate that less labor, land and equipment is now used to produce the same volume of farm products as in former years. But prices of production goods have changed markedly over the 16-year period, so that the series based on current prices, including a return to the operator and family for their labor and for their investment in the farm equal to prevailing hired labor wage rates, and net rentals and interest rates respectively, is a better reflection of the changes in production costs per unit in terms of current dollars. This series indicates the change in farm product prices which would return to the operator and his family for their labor and investment as much as they could get by working at prevailing wages and renting out their land, livestock and machinery at current local market rates.

Very substantial gains have been made in production efficiency during the last decade by operators of most types of farms. A number of factors have contributed to a general reduction in the amount of labor, land and other resources required per unit of farm output. Chief among these is the 30 to 50 percent increase in the average production per farm of the types illustrated in figure 7. By expanding production, operators on most family-operated farms can reduce their costs per unit through more efficient use of labor, machinery and land. A considerable

OPERATING EXPENSE PER UNIT OF PRODUCTION
TYPICAL FAMILY-OPERATED FARMS, BY TYPE, 1930-45
INDEX NUMBERS (1930-44=100)

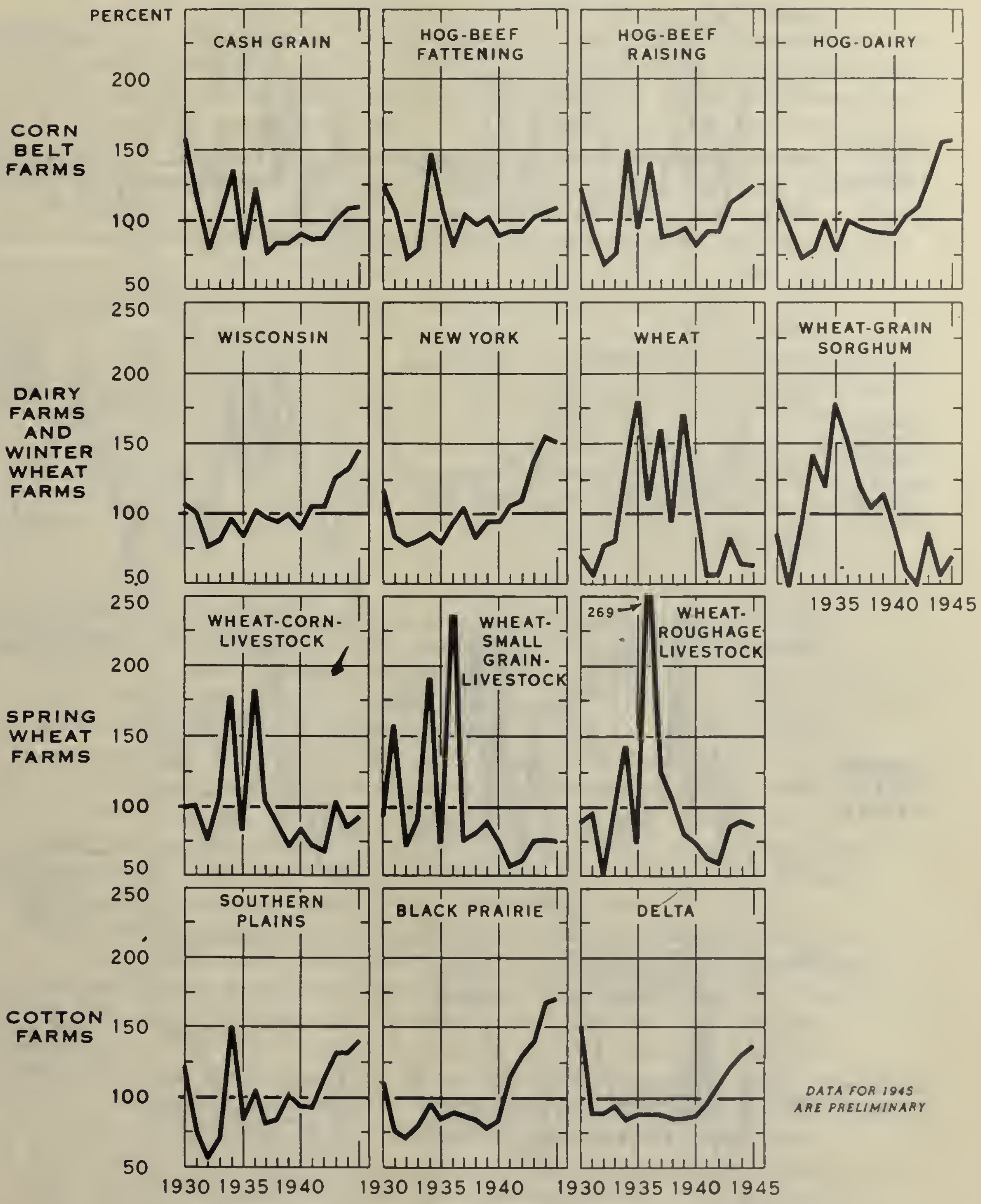

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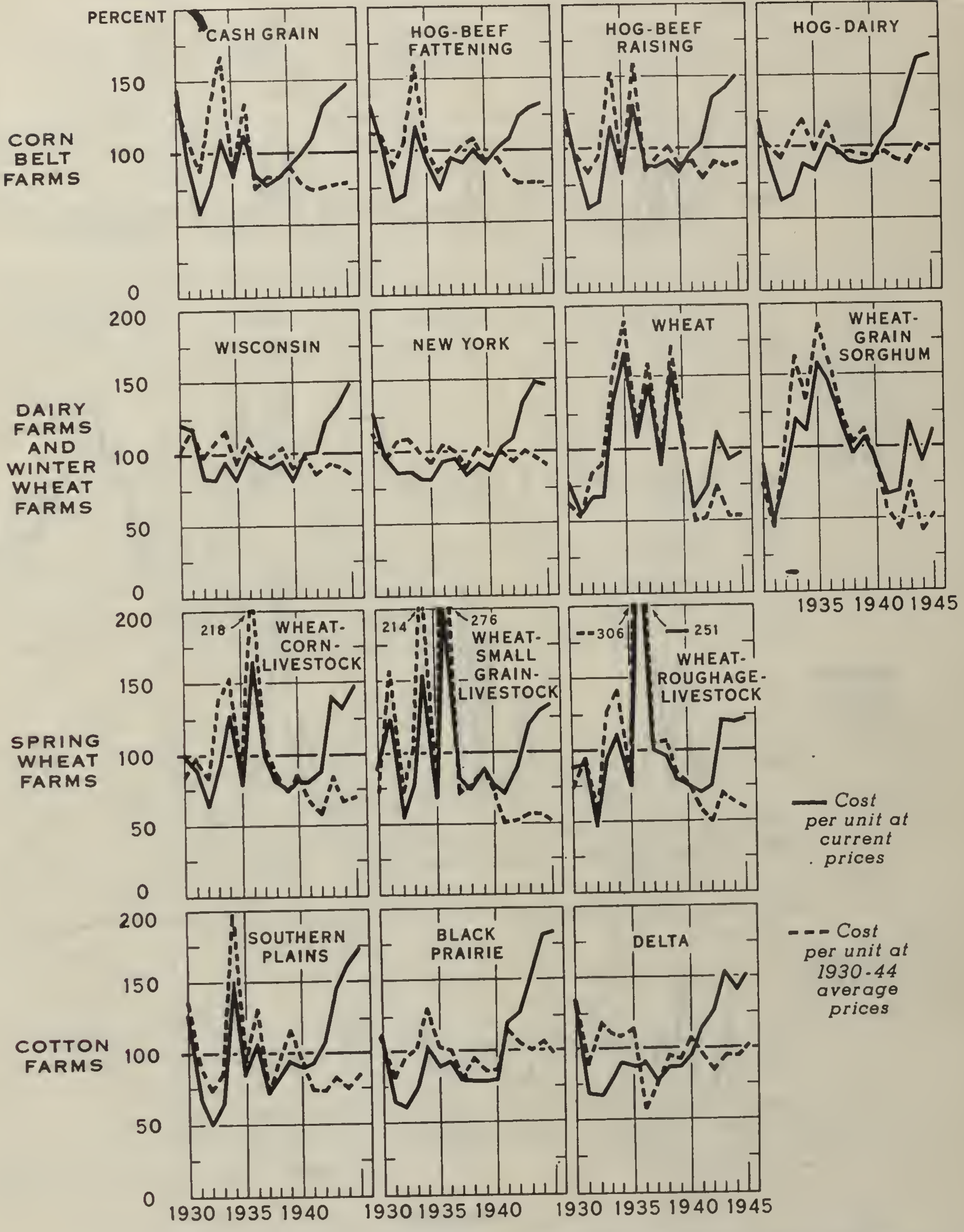
FIGURE 6

This index measures the combined effect of changes in prices and quantities of cash cost goods used, and in the volume of production obtained by their use. Annual variations in operating expense per unit of production are traceable largely to fluctuations in crop yields. Differences in the rate of improvement in production efficiency and in the composition of production expenses account for the long-run differences between types of farms.



TOTAL COST PER UNIT OF PRODUCTION

ALL LABOR, LAND, AND OTHER COST GOODS AT CURRENT AND 1930-44 AVERAGE VALUES, FAMILY-OPERATED FARMS, BY TYPE, 1930-45

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FIGURE 7

By adopting more efficient production methods and steadily expanding production, farmers generally have reduced substantially the quantity of cost goods required per unit of product marketed. Costs, in terms of the current value of these inputs, shot up 50 percent or more during the war - a substantial part of such production costs represent returns to the operator and family for their labor, and for their investment in land and other farm capital.

part of the increase since 1930 in production per farm and per worker was obtained by increasing the scale of operation. Although many of our family-operated farms are yet too small to permit the most efficient use of machinery and family labor, substantial progress has been made in obtaining greater efficiency in production on many farms.

Mechanization progressed rapidly in most sections, especially after 1935, and contributed significantly to the marked gains in labor efficiency. The very substantial improvement in crop yields during the past decade not only aided in expanding production but also materially enhanced the efficient use of land, labor, and machinery. Differences in the rate of mechanization and improvement in crop yields account for much of the differences between types of farms in the reduction of real unit costs. Crop yields were increased by adopting improved crop varieties, increased use of fertilizer and lime, soil conservation activities and better production practices generally.

Those producers who were able to reduce substantially the quantity of cost goods going into each unit of product have best been able to hold their current production costs in check. They will also be in a better position to withstand any future price declines than those making fewer cost-reducing adjustments. In particularly unfavorable economic position are those farmers who produce crops with hand-and-horse methods in direct competition with others using tractors and power equipment.

In considering the immediate and more distant future, we must not overlook the gains in production efficiency and in farmers' earnings resulting from sharp increases in crop yields and production per farm especially during the past few years. A bad crop year with resulting low yields would send unit costs soaring far above their present levels; witness the experience of the middle 1930's. In fact, any substantial reduction in output per farm from whatever cause would tend to wipe out recent gains in lowering real costs (costs in terms of quantities of goods and services used per unit of production) and cut sharply into farm family earnings. Individual farmers cannot reduce output without increasing their real costs per unit of production. A very large part of total farm production costs are "fixed;" in the sense that the labor and investment furnished by the operator and his family make up more than half the total costs on most types of family-operated farms. When production is reduced, labor, machinery and usually land are less fully utilized. A smaller volume of product has to bear the same total overhead costs, and the cost per bushel or per pound is necessarily higher. The net return per unit is thus smaller and, with the smaller volume of output, earnings or return to the operator and his family are usually curtailed. The effect is even greater than the measures shown in figure 7 would indicate, for in this instance only the labor and other items actually used in the production of a particular year are included in the calculated unit costs. Underemployment of family labor does not appear as a cost, yet it certainly results in reduced family income.

* * * *

In general, we can expect farmers' cost-price relationships in 1947 to depart little from those obtained in 1946. Supplies of many production items, inadequate during the last few years, will be more plentiful in 1947. Manufacturers are increasing their efforts on a variety of machines and equipment to meet specific conditions. The psychological reaction of farmers to high costs (although not necessarily high in relation to prices) will be to give more emphasis to increased efficiencies in production and production methods.

The future holds great promise of advances in the efficiency of farm production far surpassing those of the past decade. Farmers who are able to take advantage of improved practices will profit not only from lower unit costs but from the larger output per farm commonly associated with such improvements. Unit production costs, in terms of quantities of cost goods used, will surely continue to decline except as interrupted by drought, depression or other adverse developments.

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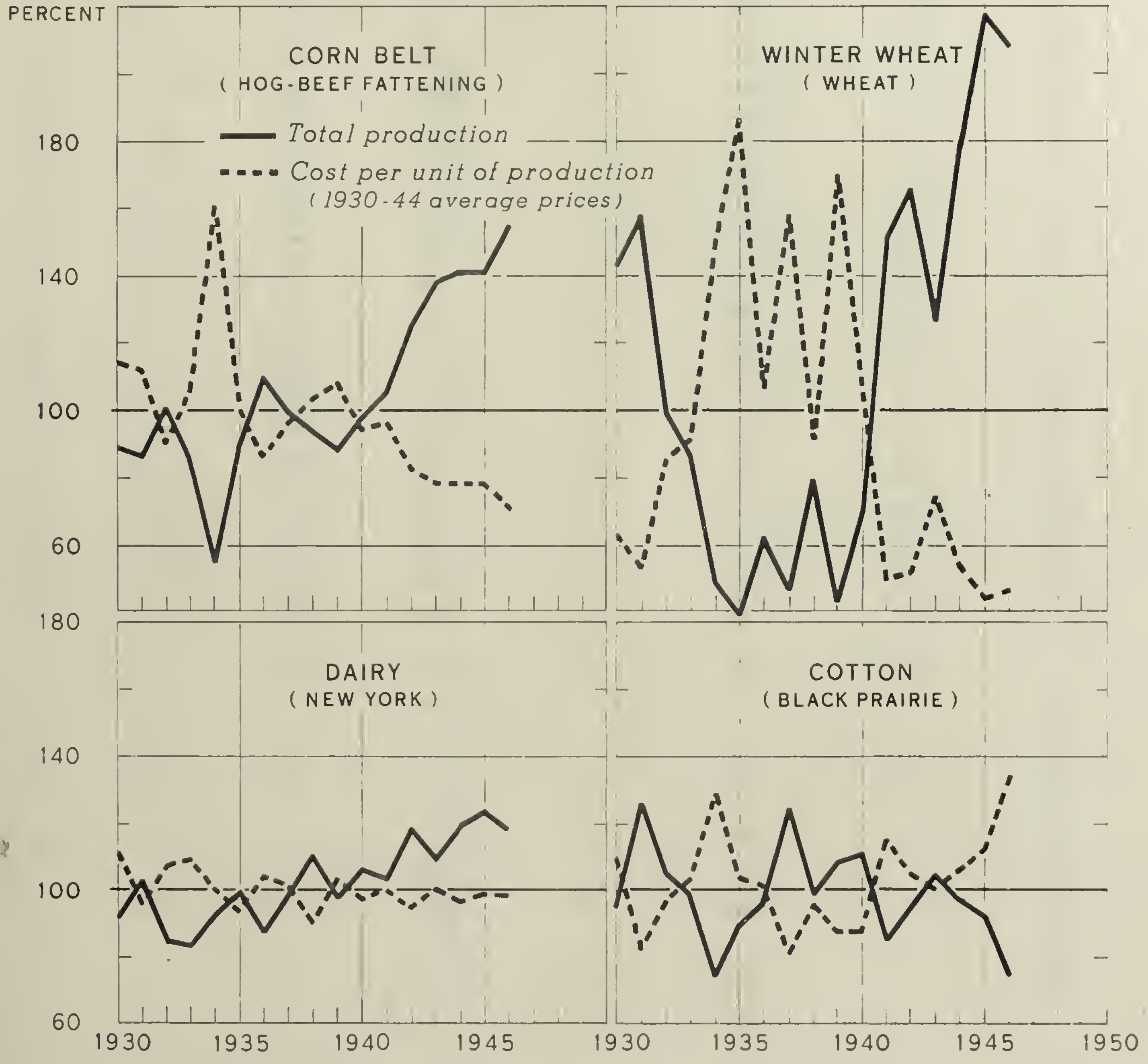
# THE Farm Cost SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

FCS - 2 BAE MARCH 1947

## TOTAL PRODUCTION AND COST PER UNIT OF PRODUCTION, FAMILY OPERATED FARMS, BY TYPE, 1930-46

INDEX NUMBERS (1930-44 = 100)



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A high volume of production per farm is essential in obtaining a relatively low cost of production per unit. Farmers who have been able to make the most effective use of mechanical power and equipment have increased the size of farm and total output and have made the greatest reduction in cost per unit of product.

Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | All commodities 1/ | Farm machinery | Building material other than house | Equipment and supplies 2/ | Feed | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|
| 1910 | 77 | 66 | 68 | 91 | 86 | 99 | - | 82 |
| 1911 | 81 | 66 | 70 | 90 | 99 | 99 | - | 83 |
| 1912 | 77 | 66 | 70 | 90 | 84 | 100 | 66 | 86 |
| 1913 | 80 | 66 | 68 | 90 | 99 | 102 | 63 | 88 |
| 1914 | 78 | 66 | 63 | 89 | 94 | 100 | 64 | 86 |
| 1915 | 82 | 68 | 69 | 95 | 93 | 112 | 77 | 87 |
| 1916 | 98 | 70 | 79 | 116 | 120 | 120 | 92 | 96 |
| 1917 | 119 | 80 | 93 | 141 | 170 | 137 | 96 | 119 |
| 1918 | 137 | 102 | 109 | 163 | 179 | 170 | 123 | 150 |
| 1919 | 151 | 105 | 128 | 162 | 195 | 182 | 181 | 175 |
| 1920 | 137 | 109 | 139 | 170 | 127 | 186 | 98 | 205 |
| 1921 | 111 | 105 | 105 | 137 | 90 | 156 | 86 | 131 |
| 1922 | 109 | 93 | 107 | 126 | 114 | 129 | 84 | 129 |
| 1923 | 111 | 97 | 109 | 123 | 124 | 126 | 92 | 144 |
| 1924 | 112 | 101 | 109 | 120 | 131 | 120 | 97 | 147 |
| 1925 | 116 | 101 | 111 | 126 | 131 | 129 | 111 | 149 |
| 1926 | 115 | 101 | 109 | 130 | 127 | 126 | 138 | 152 |
| 1927 | 113 | 101 | 108 | 127 | 128 | 121 | 127 | 152 |
| 1928 | 117 | 101 | 107 | 124 | 137 | 131 | 115 | 152 |
| 1929 | 116 | 100 | 107 | 123 | 134 | 130 | 119 | 153 |
| 1930 | 111 | 100 | 105 | 118 | 122 | 126 | 112 | 142 |
| 1931 | 97 | 99 | 94 | 104 | 86 | 115 | 98 | 110 |
| 1932 | 86 | 93 | 85 | 96 | 64 | 99 | 66 | 81 |
| 1933 | 85 | 91 | 87 | 93 | 71 | 96 | 61 | 72 |
| 1934 | 97 | 95 | 99 | 98 | 98 | 104 | 90 | 81 |
| 1935 | 100 | 96 | 98 | 97 | 106 | 102 | 99 | 88 |
| 1936 | 98 | 98 | 99 | 99 | 105 | 96 | 92 | 94 |
| 1937 | 107 | 101 | 105 | 103 | 121 | 102 | 124 | 107 |
| 1938 | 98 | 104 | 100 | 103 | 85 | 100 | 102 | 106 |
| 1939 | 96 | 101 | 100 | 99 | 85 | 100 | 84 | 105 |
| 1940 | 98 | 100 | 101 | 99 | 94 | 97 | 84 | 107 |
| 1941 | 103 | 103 | 109 | 104 | 101 | 100 | 80 | 131 |
| 1942 | 117 | 108 | 120 | 114 | 125 | 111 | 123 | 171 |
| 1943 | 128 | 111 | 128 | 121 | 150 | 120 | 156 | 224 |
| 1944 | 136 | 114 | 138 | 126 | 165 | 121 | 175 | 268 |
| 1945 | 137 | 116 | 141 | 128 | 163 | 121 | 181 | 297 |
| 1946 | 151 | 120 | 158 | 132 | 194 | 124 | 190 | 321 |
| Jan. | 138 | | | | 165 | | | 307 |
| Feb. | 139 | | | | 167 | | 186 | |
| Mar. | 139 | 116 | 144 | 128 | 168 | 122 | 191 | |
| Apr. | 140 | | | | 169 | | 191 | 307 |
| May | 146 | | | | 182 | | 192 | |
| June | 150 | 118 | 151 | 129 | 191 | | | |
| July | 159 | | | | 227 | | | 321 |
| Aug. | 161 | | | | 231 | | | |
| Sept. | 157 | 121 | 156 | 133 | 214 | 127 | 189 | |
| Oct. | 159 | | | | 210 | | | 321 |
| Nov. | 161 | | | | 210 | | | |
| Dec. | 163 | 123 | 180 | 135 | 204 | | | |
| 1947 | | | | | | | | |
| Jan. | 163 | | | | 196 | | | 339 |
| Feb. | 169 | | | | 192 | | 229 | |

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1/ Excluding wages.

2/ Based on prices paid by farmers for 16 items including binder twine, lead arsenate milk pails, pitchforks, gasoline for autos and trucks, motor oil, and tires, and other similar items used on farms for production.

Note:- For a list of items included in this table see "Agricultural Prices" Bureau of Agricultural Economics, April 29, 1946.

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# FARM COST SITUATION

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## General Situation

Farmers will pay more attention to costs in 1947 than they have in the past few years. Long-term debts incurred when costs and incomes are high will become more burdensome as prices and gross income fall off.

When farm-product prices are considerably higher than cost items and higher prices for farm products and higher incomes are in prospect, cost increases do not seem so important. Gross farm production and prices of farm products have gone up since 1938. Gross farm income also has gone up, and its advance has been more rapid than for either production or prices. Farm costs also increased, but relatively less and at a slower rate than gross income and prices. It is quite probable that farm costs will remain relatively high for the next few years. Prices and costs usually move together, but costs lag behind.

Demand for food and fiber for the armed forces is now less than during the war and requirements for relief in the countries devastated by the war are tapering off. Many commodities are not so scarce now as they were during the war. The return to peace-time conditions has brought about many other adjustments in farm costs.

There is evidence of some tapering off in farm-product prices. The index of prices received by farmers converted to a 1935-39 base shows an advance from 192 in January 1946 to 232 in August. Largely because of the spurt in meat prices, particularly hogs, the index rose to 254 in October. The index has declined since then and was 245 in February 1947. On the other hand, prices farmers pay for commodities purchased (particularly machinery and building materials) have increased some. (See inside cover page.) Feed prices have declined about 25 percent since the peak reached in July.

Cash wage payments and value of perquisites to hired farm workers in 1946 were the highest on record. Wage rates will continue at the high levels of 1946 for some time but probably will taper off some in the latter part of 1947. The supply of farm workers increased in 1946 over 1945 and a further increase is expected in 1947.

(For release March 17 A.M.)

The total volume of machinery, power and equipment on farms has increased each year since 1940, and in 1946 was about one-third above the 1935-39 average. More machinery will be available in 1947 than during the past few years, but at prices above those in 1946. Production of farm machinery for the last 6 months of 1946 was about 25 percent above that for the same period in 1945, and a further increase in production is expected in 1946-47. Although retail prices of new machinery and costs of using machinery have increased less than have farm incomes and most items of farm cost since the pre-war period, machinery prices and costs were at about record levels in 1946 and little change is in prospect in the years immediately ahead.

The number of tractors in 1946 was more than double the number in 1935-39. The increases in numbers of combines, corn pickers, windrow pick-up balers, and tractor row crop cultivators, mowers and attachments were greater than those for tractors. The increase for moldboard plows and some heavy duty machines was less than for tractors. War-time pressures forced use of machinery that normally would have been discarded. As a result, machinery on farms is on the average slightly older than in normal times.

The peak of feed costs, particularly grain and hay, for the war and post-war period probably has been reached. The government price support for corn will tend to hold feed costs up through 1948, but the long-term trend will be downward except in areas of local shortages. The supply of feed grain per animal unit on January 1, 1947 was the largest on record. Hay stocks were about 10 percent above the 1938-42 average and the production of by-product feeds for the first half of 1947 is expected to be a little larger than in 1946. As prices of livestock and livestock products decline farmers will tend to reduce feed costs by using more farm-grown feeds and less purchased feeds.

Farmers are paying higher prices for most seeds than in 1946. While seed production, generally, was higher last year than in the past few years stocks on June 30, 1946 were abnormally low. As a result, 1947 seedings will draw more heavily than usual on production of the previous year.

Record breaking supplies of fertilizers are expected to be available for use in 1947. However, the unprecedented demand, particularly in areas using relatively little fertilizer before the war, continue to outrun the increasing supplies. Farmers will pay higher prices for fertilizer in 1947 than they have in several years, but income and price ratios will probably continue favorable to comparatively high purchases of fertilizer.

Lumber is basic to most building, and construction, particularly housing, is expected to reach a new high in 1947. In addition, new uses have been found for wood, particularly Western pine, cedar and red wood. Despite the fact that lumber production has been high the past few years and is expected to be near record levels in 1947, the demand for lumber is expected to continue strong relative to supply during 1947. However 1947 prices of lumber are relatively higher than those of other building materials and are not likely to increase further.

Production of containers, nails, staples, fencing, bale ties, galvanized roofing and siding, metal pipe and similar products was improved in the latter part of 1946 after labor-management difficulties were settled. Production is expected to increase further and distribution to improve in 1947. Costs of most of these products have increased since price ceilings were removed and are not likely to decline soon.

Record numbers of farms have been transferred voluntarily to new owners at high and rising prices. About half of the recent purchases have been credit financed sales, about 70 percent of which have had a debt of 50 percent or more. A considerable number have had a mortgage debt amounting to over 75 percent of the sale price. Many of these debts exceed the full market value of the farm a few years ago. Those buying largely on credit assume fixed costs for interest and principal repayments that may seem reasonable at current high income levels, but may become extremely burdensome when net farm incomes are considerably lower.

Interest charges paid by farmers on farm-mortgage debt took a turn upward in 1946 after declining for almost a quarter of a century. These costs probably will be higher in 1947 as additional machinery, equipment and supplies become available and compete for the cash reserves of farmers.

## Farm Labor

Farm wage rates in 1946 were over three times the pre-war level and were the highest on record. Cash wage payments and value of perquisites to hired farm workers in 1946 also were the largest on record. Farm wage rates this year will continue high but probably will taper off some in the last part of the year. Farm employment increased somewhat in 1946, and is expected to increase further in 1947.

For at least the next year or two, the number of persons available for farm work will not change greatly, prices of farm products will be somewhat lower than at present, and farm wage rates will remain relatively high. This means different things to different farmers. Nearly half of the Nation's farmers hire no labor at all; nearly a third hire a little labor; and about one-fifth employ over 90 percent of the hired farm labor. On the other hand, about a fourth of the hired farm workers are also farm operators or members of farm families who do some work for wages on other farms.

Hired labor costs are a major production expense to the fifth of the farmers who do most of the hiring. This group will benefit most by adding to the gains in labor productivity that were made during the war.

Despite high wage rates, hired labor costs per unit of product can be kept down by increasing the productivity of the workers. While wage rates tripled during the war, productivity of farm workers also increased materially. Prices of farm products more than doubled and total farm output increased by almost a third. (See table 1). Thus, despite record payments to hired workers, net income of farmers also reached record proportions.

Not only must good wages be paid, but farm working and living conditions would need to be made more attractive in order to obtain an adequate supply of capable workers. The farm operators who depend most on hired workers still will have to plan carefully in order to obtain an adequate supply of reasonably well-trained labor.

Table 1. Farm wage rates and related data, United States, 1935-39 average and 1940-46 inclusive

Index numbers (1935-39 = 100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates | Ratio farm wage rates to | |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ | | Production per worker | Gross farm income per worker |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 107 | 110 | 107 | 97 | 99 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 131 | 112 | 94 |
| 1942 | 95 | 94 | 99 | 122 | 128 | 171 | 134 | 92 |
| 1943 | 94 | 94 | 94 | 119 | 127 | 224 | 176 | 96 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 268 | 199 | 108 |
| 1945 | 90 | 92 | 82 | 123 | 137 | 297 | 217 | 113 |
| 1946 4/ | 92 | 94 | 84 | 126 | 137 | 321 | 234 | 113 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Preliminary.

Lower labor costs per unit of product can be obtained by higher crop yields, greater use of machinery and other labor-saving devices, better supervision, and farm work simplification. Although additional or better machinery will add to capital investment, the resulting savings in labor costs often reduce total operating costs. Most capital investments that increase labor efficiency on the farm should pay off, but the savings should be balanced against the extra costs. The fifth of the farmers depending most on hired labor should be generally in the best position to make adjustments of this kind.

High farm wage rates and farm prosperity generally go together; conversely, dollar-a-day wages and 30-cent corn historically have gone together. High levels of business activity and industrial employment not only mean reduced supplies of farm labor and relatively high wage rates, but a good market for farm products and high farm incomes as well.

## Farm Power and Machinery

The index of total volume of machinery and power on farms has increased each year since 1940, and in 1946 was about one-third above the 1935-39 average (see table 2). With production of farm machinery for the last 6 months of 1946 about 25 percent above the same period of 1945, a further increase in volume in 1946-47 is expected.

The volume of power and machinery increased despite obstacles to production of farm machinery during the war, the suspended production of automobiles from 1942 to 1945 and continuous annual reductions in horse and mule numbers. Much of the increase came from the marked expansion in numbers of tractors and tractor machines. The number of tractors in 1946 was more than double the 1935-39 average and the number of many tractor machines increased even more. Combines, corn pickers, windrow pick-up balers, tractor row crop cultivators and tractor mowers all have increased more than have tractors, but moldboard plows and some other heavy duty tillage machines have increased less.

A part of the increase in tractor numbers and other machines since 1942 has come about through the reconditioning of old machines that had been discarded or exchanged for new ones. This means that the average age of tractors has increased. According to standards of use in prewar years, about 400,000 of these tractors would have been discarded last year. This has also been the case for some other farm machines.

Along with the marked increase in tractors and tractor machines, there have been important decreases in horse and mule numbers and in all kinds of horse-drawn machines and equipment. The number of horses and mules in 1946 was about 4.2 million, or 27 percent, below the 1935-39 average; a much greater decline than would have occurred under normal conditions. High feed prices and high meat animal prices contributed to this decline.

The number of farm automobiles showed little change from 1940 to 1946. Purchase of limited numbers of new automobiles, mostly from dealers' stocks, and of used automobiles from urban areas helped maintain numbers of automobiles on farms during the war. However, the average age of farm automobiles was about 3 years greater in 1946 than in 1940.

There has been a marked increase in the number of farm motortrucks. Farmers have purchased a considerable number of used motortrucks from urban areas. They also have purchased a fairly large number of used motortrucks from the armed services, and have converted automobiles to motortrucks.

Table 2.- Power and machinery on United States farms and related data, 1935-39 average and 1940-46

(1935-39 = 100)

| Year or period | Number on farms, January 1 | | | | Volume on farms, January 1 1/ | | Gross farm income calendar year 2/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|
| | Horses and mules all ages | Tractors | Auto-mobiles | Motor trucks | All machinery and equipment other than tractors and motor vehicles | All farm power, machines and equipment | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 124 | 106 | 108 | 119 | 107 | 105 | 93 |
| 1941 | 90 | 135 | 108 | 113 | 125 | 109 | 132 | 115 |
| 1942 | 87 | 152 | 110 | 119 | 137 | 115 | 177 | 148 |
| 1943 | 84 | 169 | 107 | 132 | 152 | 120 | 219 | 179 |
| 1944 | 80 | 178 | 106 | 141 | 158 | 122 | 229 | 182 |
| 1945 | 76 | 193 | 105 | 150 | 176 | 127 | 236 | 188 |
| 1946 3/ | 70 | 208 | 105 | 159 | 200 | 133 | 262 | 216 |

1/ In terms of average 1935-39 prices.
2/ Includes government payments.
3/ Preliminary.

Largely because of greatly increased feed prices, per head costs of keeping work stock in 1946 were about double prewar. Farm wage rates in 1946 were more than three times the prewar level. Retail prices of new machines and costs of materials and services incidental to their operation were in 1946 considerably above the prewar averages, but in general the increases were much less than the increase in costs of keeping work stock or the increase in wage rates. Thus, conditions in recent years have furthered the advantage of using power machines, and other labor saving machines and equipment. The greatly increased farm income has enabled many farmers to buy the new machines. An even greater increase in volume of power and machines would have taken place if more new machinery and equipment had been available to farmers.

Conditions in the years ahead will be favorable for expanding the use of machinery despite the fact that labor will be more plentiful and farm product prices and incomes will be lower. Although retail prices of new machinery and costs of using machinery have increased less than have farm incomes or most items of farm cost since the prewar period, machinery prices and costs were at about record high levels in 1946 and little change is in prospect in the years immediately ahead. More bushels of wheat or corn and more pounds of cotton or tobacco may be required to pay for machinery purchased on long-time credit than when the debt was incurred. Farmers should appraise thoroughly their machinery and power needs and limit their purchases to machines and equipment that can be expected to pay out with somewhat lower level of farm incomes than in 1946. Where the work to be done with a specific machine is small, it may be advantageous either to rent a machine, hire the work done, or to continue using relatively old machines and methods.

## Feed Costs

The index of feed grain and hay prices in February 1947 was 95 percent above the 1935-39 average, somewhat higher than a year ago but much below the peak reached in July 1946 (see table 3). Feed costs will probably remain around present levels through 1948 because of the Government commitment to support the price of corn. The index of livestock and livestock product prices in February 1947 was 138 percent above its 1935-39 average. Thus, livestock prices were about 20-25 percent higher than feed costs, but they are likely to reach a balance in line with feed costs. This readjustment may come about gradually over a year or more; or it may come rather quickly if consumer-demand slackens.

The supply of feed grains per animal unit on January 1 was the largest on record. Hay stocks, although smaller than a year earlier, are considered ample for the livestock to be fed. Production of byproduct feeds for the first half of 1947 is expected to be a little larger than in 1946.

The quantity of feed concentrates fed in the 6 months from April through September 1947 is expected to be 2-3 percent less than a year earlier. Hogs will take less feed during this period than in 1946 because the fall pig crop declined 12 percent and the increase in the spring pig crop will probably be rather small. Poultry also will take less feed because of fewer hens and pullets and probably a smaller chicken and turkey crop. There are fewer milk cows than a year ago. Feed grain prices, however, will be supported for several months at least by a strong commercial and export demand. It is expected that about 140 million more bushels of corn may be used for nonfeed uses and exports in the year 1946-47 than was used in 1945-46.

Prices received by farmers for feed grains and hay are about 11 percent above prices a year ago when price controls were in effect. Prices paid by farmers for millfeeds are about 7 percent above a year ago. Mixed dairy feeds and laying mash are 11 and 14 percent higher respectively and high protein feeds are around 40 percent higher than a year ago. The present higher price of high protein feeds compared with feed grains reflects the strong demand for high protein feeds when returns from livestock and livestock products are high.

Table 3. Prices of livestock and feed, 1927-47

Index numbers (1935-39 = 100)

| Year | | Livestock and livestock product prices 1/ | Feed grains and hay prices 1/ | Ratio of livestock prices to feed prices |
|---|---|---|---|---|
| 1927 | | 127 | 121 | 105 |
| 1928 | | 136 | 130 | 105 |
| 1929 | | 138 | 126 | 110 |
| 1930 | | 117 | 113 | 104 |
| 1931 | | 85 | 78 | 109 |
| 1932 | | 63 | 51 | 124 |
| 1933 | | 62 | 60 | 103 |
| 1934 | | 72 | 100 | 72 |
| 1935 | | 99 | 113 | 88 |
| 1936 | | 103 | 108 | 95 |
| 1937 | | 109 | 132 | 83 |
| 1938 | | 97 | 75 | 129 |
| 1939 | | 93 | 73 | 127 |
| 1940 | | 96 | 86 | 112 |
| 1941 | | 120 | 94 | 128 |
| 1942 | | 148 | 117 | 126 |
| 1943 | | 172 | 155 | 111 |
| 1944 | | 166 | 175 | 95 |
| 1945 | | 174 | 170 | 102 |
| 1946 | | 205 | 205 | 100 |
| | Jan. | 175 | 173 | 101 |
| | Feb. | 173 | 175 | 99 |
| | Mar. | 174 | 180 | 97 |
| | Apr. | 176 | 180 | 98 |
| | May | 177 | 198 | 89 |
| | June | 182 | 206 | 88 |
| | July | 212 | 257 | 82 |
| | Aug. | 225 | 237 | 95 |
| | Sept. | 214 | 233 | 92 |
| | Oct. | 256 | 234 | 109 |
| | Nov. | 252 | 197 | 128 |
| | Dec. | 252 | 196 | 129 |
| 1947 | Jan. | 240 | 194 | 124 |
| | Feb. | 238 | 195 | 122 |

1/ Calendar year.

The peak of feed costs (grain and hay) for the war and post-war period probably has been reached. The long-term trend from now on will be downward. However, the government support of corn prices will tend to hold feed costs up through 1948. If prices of livestock and livestock products should decline sharply sometime before the end of 1948 the tendency will be for farmers to reduce costs by buying less of the higher priced feeds (particularly high protein feeds) and depend more on home raised feeds.

Prices of poultry feeds in February were 10-15 percent above a year ago, and there is no reason to expect any important changes in the cost of feeds for poultry in the next few months. Poultry product feed ratios in February were less favorable for poultrymen than for most other classes of livestock producers. Egg production in 1947 will be 5 to 8 percent less than in 1946. Egg-feed price ratios will be less favorable for egg producers than in 1946 or the long time average.

Dairy product feed-price ratios in February were less favorable for dairymen than in December and January. The butterfat-feed ratio was below its long time average for February but the milk-feed ratio was still 9 percent above its average. Commercial dairy feeds this winter cost 10-15 percent more than a year ago. The price of milk in February 1947 was 13 percent higher than the price of milk plus a dairy production payment February 1946 of 65 cents a hundred pounds. The price of butterfat in February 1947, however, was about the same as the price in February 1946 plus a dairy production payment of 17 cents a pound. The cost of feed concentrates for dairy cows is not expected to decline materially in the next few months.

During the pasture season (April through September) about 80 percent of the feed for dairy cows and a larger percentage of the feed for beef cattle and sheep comes from pasture. Less than one-third of the total concentrates fed in the year to dairy cows are fed during this period. The condition of pastures therefore has a considerable effect on feed costs. The weather during the past six years for the country as a whole has been favorable to the development of pastures. But farmers also can do much to improve pastures by liming, fertilizing and using improved varieties of seed for permanent pasture and by the greater use of rotation and supplementary pastures. The problem very often is that of supplying sufficient pasturage during July and August after the permanent pastures have dried up. Some forethought in this direction may make possible a steady flow of milk and continuous gains on beef cattle during these months without the use of expensive grain and silage. The place of pasture in the raising of poultry and hogs will become more important as prices of livestock and livestock products decline in the next few years. More and better pasturage throughout the season is one way for farmers to reduce their feed costs per unit of product.

More timely harvesting of hay this summer would tend to lower the feed cost of dairy products and of gains on beef cattle next fall and winter. The feed value in hays could be increased greatly if more farmers cut hay at the proper stage of maturity and then cured, handled and stored to preserve the quality. Improvement in the quality of hay is important in the northern dairy region because hay is the principal source of carotene or vitamin A.

On many farms in this region hay is cut too late for the production of good quality hay.

## Seeds

The cost of legume and non-legume hay, pasture and cover crop seeds in 1947 will be higher than in 1946. Farmers paid an average of about 18 percent higher prices in February 1947 than in 1946 for alfalfa and red, alsike, and sweet clover seeds. Timothy, red top, Kentucky bluegrass and orchard grass averaged about 22 percent higher than a year ago. All of these increases may not be reflected uniformly or entirely by retail prices in 1947. But they do indicate to a considerable extent what may be expected. Growers received 74 percent more for Kentucky bluegrass seed in 1946 than in 1945; 76 percent more for red top; 31 percent more for red clover; and 25 percent more for alsike clover. Hairy vetch was 12 percent higher in 1946 than in 1945. This was the greatest increase in price received by growers of cover crop seeds. The only decrease occurred in the case of orchard grass for which prices paid to growers in 1946 were only about half of those paid in 1945.

Production of all clover and cover crop seeds in 1946 was about 20 percent above that of 1945. On the other hand grass seed production last year was about 15 percent lower than in 1945. Decreases occurred primarily in the production of Kentucky bluegrass, red top, meadow fescue, crested wheat grass, brome grass, and all vetch seeds. Stocks on June 30, 1946 were much lower than in previous years so that 1947 seedings will need to draw more heavily than usual on current production. The quality of the seed crop was generally good in 1946 and the movement from growers to trade channels was faster than usual.

## Fertilizers

Farmers will pay higher prices for fertilizer in 1947 than they have in several years. Although prices of fertilizer have risen during the past several years, prices received by farmers for commodities they sell have risen relatively more rapidly. As a result, the ratio of farm-product prices to prices paid for fertilizer has been comparatively favorable. This ratio probably will continue favorable in 1947 and probably will stimulate comparatively high purchases of fertilizer.

Fertilizer prices are influenced by the prices of materials used in their manufacture. During the past year prices of chemical and organic nitrogen materials have risen about 8 percent and 45 percent, and prices of phosphatic materials and of mixed fertilizers approximately 8 and 10 percent. Prices of fertilizers which contain considerable quantities of organic nitrogen (such as tobacco and vegetable crop fertilizers) will be affected particularly by these higher prices.

Record breaking supplies of fertilizers are expected to be available for use on 1947 crops. More nitrogen and phosphatic materials can be expected in the last half of 1947. The nitrogen will come from plants that were producing fertilizer as a by-product only during the war and are now leased by private industry for the production of fertilizer. The phosphate will come from increased supplies of phosphate rock, sulphuric acid, and from new acidulating plants. However, the unprecedented demand, particularly in areas using relatively little before the war, continues to outrun the increasing supplies. Thus, the increased fertilizer production from expanded facilities will be accompanied by wider and heavier fertilizer use, and by higher prices than were paid by farmers for fertilizers in recent years.

## Lumber, Containers and Farm Supplies

The demand for lumber, containers and farm supplies will remain strong through 1947. Lumber production is expected to exceed 35 billion board feet this year, slightly more than the output in 1946. Millwork and beveled siding are important items that will be in short supply. During the war new uses, such as patterns, food shooks and painted furniture were found for Western pine. Cedar and redwood were used for the first time for pickle vats, water coolers, and other products. All three of these woods were previously used for beveled siding, and, in addition, large quantities of Western pine were used in millwork. Postwar supplies now must be divided between both old and new uses. Shortages in these items are expected to continue until methods are found for utilizing other kinds of wood for these purposes.

Although distribution as a whole will improve, spot shortages will occur in wooden containers during 1947, particularly in Western areas. Increased needs for wire will interfere with the production of wire-bound boxes. Imports of burlap for bags in 1947 will be below those of last year, but if good use is made of second-hand bags supplies should be adequate.

Production of tin cans this year is expected to improve slightly over 1946. All quotas on the use of tin cans were removed on December 27, 1946. This may slow up deliveries from manufacturers until supplies are more generally available. No difficulty should be experienced in obtaining paper, open mesh or cotton bags in 1947.

Production of merchant trade products (barbed and woven wire fencing, nails and staples, bale ties, galvanized roofing and siding, wire netting and pipe), like all other steel items, was curtailed in the first quarter of 1946 by labor-management difficulties in the steel and coal industries. However, a very high rate of production was maintained for the remainder of the year and the outlook for further increases in 1947 is very good. The steel industry is now operating at near capacity and if production is maintained at this level, output of merchant trade products will be increased accordingly. Housing construction will continue to draw heavily on supplies of galvanized sheet, pipe and nails, and it is anticipated that these items will be in short supply for some time, although the situation may ease some late in 1947.

The sharp increase in the index of farm building materials prices was caused by recent advances in price of lumber and millwork. The costs of all containers have increased since price ceilings were removed and are not likely to decline soon, particularly in those areas where supplies of containers will be scarce.

## Insecticides and Fungicides

Insecticides and fungicides in general will probably cost farmers from 5 to 7 percent more in 1947 than they did in 1946. The principal items for which supplies will continue to be below quantities desired, are nicotine and dinitro compounds, rotenone, napthalene and paradichlorobenzene. The supply situation in 1947 appears favorable for most of the other items such as pyrethrum, cryolite, sodium fluoride, sodium fluosilicate, copper chemicals, sulfur, dust diluents, petroleum insecticide carriers and synthetic compounds such as DDT, thiocyanates, synthetic organic fungicides, arsenicals, and fumigants. But generally high distribution costs will tend to keep prices up even for items that become available in larger quantities.

## Land Values and Rentals

Both farm real estate values and rentals are currently high. Farm land rentals in 1946 were more than double the prewar level and higher than for any previous year. While high rentals mean higher costs for tenants, of greater concern are the longer-run fixed costs that frequently arise when land prices are high.

Average farm land values for the country as a whole on November 1, 1946 were only about one-tenth below the 1920 inflationary peak. During the 12 months ending November 1, 1946, average land values rose 14 percent compared with a rise of 11 percent for the year ending November 1945, 14 percent in 1944, and 13 percent in 1943. These steady increases brought the index of average value per acre of farm real estate (1912-14 = 100) for last November to **152**, 83 percent above the 1935-39 average.

Record number of farms (56 per thousand) has been transferred voluntarily to new owners at high and rising prices. The purchase of a farm generally represents a long-time fixed investment for most farmers. Those buying largely with credit assume fixed costs for interest and principal repayments that may seem reasonable under the current high income levels, but may become extremely burdensome when net farm incomes are considerably lower. A reduction of these costs usually can be arranged only after substantial principal repayments have been made.

Approximately one-half of the recent purchases of land have been entirely for cash. Down-payments in financed sales have averaged about two-fifths of the purchase price during each of the last 3 years compared with about one-third in 1941 and 1942.

About one-third of all credit financed sales (about one-seventh of all sales) during recent years have had an initial encumbrance of at least 75 percent of the sales price, and about three-fourths (one-third of all sales) have had a debt of 50 percent or more. In many instances, the debts exceed the full market value of the farm a few years ago.

Tenants are generally less affected by price and income changes than heavily mortgaged owners. Fixed cash leases may, however, cause difficulties unless provisions have been made for adjustments in line with prices of the principal products produced.

## Interest, Taxes, and Insurance

Interest - Interest charges paid by farmers on farm-mortgage debt took a turn upward in 1946 after declining for almost a quarter of a century. Increased purchases of farm real estate at higher prices and increased financing with higher-rate lenders have contributed to this upward turn. The volume of short-term debt owed to commercial banks and federally sponsored lenders also has increased; the amount outstanding on July 1, 1946 was 14 percent larger than a year earlier.

Interest rates charged by major lender groups for both real estate mortgage and short-term credit have not increased. But farmers generally are obtaining an increasing proportion of their credit from higher-rate lenders. As a result, the overall average interest rate paid by farmers probably has increased.

This means that farmers are now facing higher fixed obligations than a year ago. Furthermore, with additional machinery, equipment and supplies becoming available and with prospects of somewhat higher costs, farmers may use a larger proportion of their funds for purposes other than paying off debts. It seems probable, therefore, that the trend toward increased use and higher costs of credit may be expected to continue throughout 1947.

Taxes - Property taxes are responding to upward pressures after fluctuating very narrowly for a decade. Property-tax payments being made by farmers in 1947 probably are somewhat greater than those made in 1946. The 1945 levies on farm real estate, payable largely late in 1945 and early in 1946, were more than 10 percent higher than those of 1944. The 1946 levies, which are now being paid, are on the average somewhat above those of 1945.

Insurance - Farmers increased their insurance on property something like 7 percent in 1946 over 1945. The upward trend in building values which has occurred since policies were taken out or last renewed has resulted in increased insurance in some instances, particularly in connection with policies which come up for renewal (usually every 5 years). Some companies, however, in recalling the high losses resulting from over insurance following the price collapse in the early 1920's, have tended to discourage policy increases.

The total costs for insurance probably will increase by not more than 5 percent in 1947, but there may be a tendency toward lower unit costs through handling more insurance, and lower acquisition and other overhead costs in connection with renewals. United States farm fire losses have been relatively stable in recent years. The farmers' mutual insurance companies have increased their total reserves, which places them in a better position to maintain current rates even though there may be an expectation of higher losses ahead.

## The Cost Situation on Farms of Different Types

Farm costs and returns on family-operated farms 1/ increased in 1946, following the familiar pattern of the past several years--up. Substantial increases in feed prices and wage rates with more moderate advances in the prices of other production goods carried production expenses to new highs on 14 important types of farms (table 4). Even sharper gains in farm-product prices and near-record production, however, boosted the net incomes of these farm operators well above their wartime peaks.

Cotton farms, particularly those in the Western areas, are a notable exception to the generally bright agricultural picture. Unfavorable weather resulted in relatively low crop yields both in 1945 and 1946 and cut sharply into total farm production. Increases in farm-product prices, however, generally more than offset the loss in production.

Prices of most cost items such as labor, machinery, fertilizer, feed, and equipment and supplies continued to increase during 1945 and 1946 but at a slower rate than during the war. In 1946 feed prices were 205 percent of their prewar average and farm wage rates were 321 percent of prewar. Feed and labor are the two most important expense items on most farms. Together they make up well over half of total farm costs. But one should not overlook the fact that high feed prices mean high returns to those farmers who sell feeds. Prices received by farmers for commodities sold rose relatively faster during the war and continued relatively higher through 1945 and 1946 than prices farmers paid. Using a 1937-41 index, the combined index of cost rates paid by the operators of these types of farms in 1946 ranged from 24 to 79 percent higher. (See table 4.) Current operating expenses per unit of production generally have risen much less than this because of increased production per farm, which averaged roughly one-fifth higher in 1945 and 1946 than in 1937-41, but varied widely among types of farms. For instance, total production per farm on Southern Plains wheat farms in 1946 was 266 percent of the 1937-41 average, but was only 70 percent of the prewar average on Texas Black Prairie cotton farms.

The use of mechanical power and equipment has to a large extent increased the total amount of direct cash operating expenditures per farm over those incurred under operations with farm produced power and feed. But mechanization has permitted many farmers to increase the size of farm and to reduce substantially the cost of producing each unit of product.

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1/ These farms represent the average for their type. They do not include either the small subsistence and part-time farms, or the large-scale farms and plantations.

Table 4.- Costs and returns, family operated farms, by type, 1945 and 1946 with pre-war (1937-41 average) comparisons

| Type of farm and location | Costs and production--Index numbers, 1937-41 = 100 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Operating expenses (cash costs) per unit of production 1/ | | | | Total production per farm | | Cost rates 2/ | |
| | At current prices | | At 1930-44 prices | | | | | |
| | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 | 1945 | 1946 |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Dairy farms: | | | | | | | | |
| Central New York | 157 | 171 | 101 | 98 | 115 | 114 | 154 | 173 |
| Southern Wisconsin | 131 | 144 | 90 | 94 | 123 | 114 | 147 | 155 |
| Corn Belt farms: | | | | | | | | |
| Cash grain | 126 | 120 | 96 | 88 | 122 | 135 | 131 | 137 |
| Hog-beef fattening | 119 | 110 | 80 | 71 | 147 | 161 | 145 | 152 |
| Hog-beef raising | 123 | 126 | 91 | 90 | 140 | 141 | 138 | 142 |
| Hog-dairy | 156 | 159 | 101 | 98 | 126 | 125 | 155 | 162 |
| Spring wheat farms: (Northern Plains) | | | | | | | | |
| Wheat-corn-livestock | 106 | 118 | 77 | 81 | 153 | 140 | 138 | 143 |
| Wheat-small grain livestock | 96 | 106 | 68 | 73 | 173 | 156 | 144 | 149 |
| Wheat-roughage livestock | 91 | 99 | 62 | 67 | 209 | 182 | 154 | 155 |
| Winter wheat farms: (Southern Plains) | | | | | | | | |
| Wheat | 44 | 50 | 38 | 40 | 279 | 267 | 119 | 124 |
| Wheat-grain sorghum | 87 | 84 | 67 | 63 | 173 | 192 | 128 | 133 |
| Cotton farms: | | | | | | | | |
| Southern Plains | 174 | 195 | 123 | 120 | 76 | 76 | 138 | 159 |
| Black Prairie area, Texas | 204 | 261 | 132 | 158 | 87 | 70 | 160 | 169 |
| Delta area, Mississippi | 148 | 163 | 92 | 102 | 112 | 99 | 164 | 163 |

| Type of farm and location | Operating expenses and net farm returns | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Operating expenses 1/ | | | | | | Net farm income | | | Operator's net farm income 3/ | | |
| | Per dollar of gross farm income | | | Total per farm | | | | | | | | |
| | 1937-41 | 1945 | 1946 | 1937-41 | 1945 | 1946 | 1937-41 | 1945 | 1946 | 1937-41 | 1945 | 1946 |
| | Dols. | Dols. | Dols. | Dols. | Dols. | Dols. | Dols. | Dols. | Dols. | Dols. | Dols. | Dols. |
| Dairy farms: | | | | | | | | | | | | |
| Central New York | .56 | .44 | .43 | 1,792 | 3,282 | 3,434 | 1,415 | 4,097 | 4,578 | 1,250 | 3,627 | 4,058 |
| Southern Wisconsin | .46 | .31 | .26 | 1,362 | 2,298 | 2,307 | 1,638 | 5,132 | 6,479 | 1,316 | 4,183 | 5,348 |
| Corn Belt farms: | | | | | | | | | | | | |
| Cash grain | .34 | .23 | .17 | 1,470 | 2,314 | 2,423 | 3,038 | 7,950 | 11,810 | 2,007 | 5,583 | 8,563 |
| Hog beef fattening | .41 | .30 | .21 | 1,446 | 2,735 | 2,805 | 2,385 | 6,530 | 10,714 | 1,837 | 5,155 | 8,906 |
| Hog beef raising | .37 | .25 | .19 | 822 | 1,478 | 1,519 | 1,476 | 4,493 | 6,623 | 1,256 | 3,913 | 5,879 |
| Hog-dairy | .43 | .35 | .28 | 1,226 | 2,497 | 2,524 | 1,675 | 4,643 | 6,409 | 1,399 | 3,960 | 5,592 |
| Spring wheat farms: (Northern Plains) | | | | | | | | | | | | |
| Wheat-corn-livestock | .40 | .21 | .17 | 988 | 1,749 | 1,759 | 1,667 | 6,441 | 8,365 | 1,382 | 5,476 | 7,314 |
| Wheat-small grain-livestock | .44 | .21 | .18 | 1,034 | 1,883 | 1,900 | 1,537 | 6,892 | 8,878 | 1,188 | 5,349 | 7,181 |
| Wheat roughage livestock | .47 | .25 | .19 | 861 | 1,866 | 1,764 | 1,148 | 5,663 | 7,390 | 1,047 | 5,416 | 6,875 |
| Winter wheat farms: (Southern Plains) | | | | | | | | | | | | |
| Wheat | .50 | .14 | .12 | 1,134 | 1,743 | 1,870 | 1,525 | 10,932 | 14,053 | 1,210 | 9,592 | 12,493 |
| Wheat-grain sorghum | .42 | .21 | .17 | 1,205 | 1,990 | 2,115 | 1,930 | 7,343 | 10,438 | 1,462 | 5,841 | 8,546 |
| Cotton farms: | | | | | | | | | | | | |
| Southern Plains | .35 | .35 | .31 | 892 | 1,268 | 1,416 | 1,719 | 2,312 | 3,220 | 1,395 | 1,938 | 2,670 |
| Black Prairie area, Texas | .36 | .38 | .32 | 383 | 1,326 | 1,386 | 1,253 | 2,197 | 2,904 | 1,058 | 1,857 | 2,496 |
| Delta area, Mississippi | .22 | .17 | .15 | 275 | 460 | 442 | 1,025 | 2,240 | 2,571 | 864 | 1,919 | 2,195 |

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1/ Cash farm expenses plus depreciation of power, machinery and equipment, and farm buildings; that is, all items used in production except land and family labor (including operator).

2/ Prices paid for commodities used in production.

3/ Net Farm Income minus rent and interest paid by the farm operator. This is what the farm operator and his family get for the use of their labor, capital and land after paying current operating expenses, rent, and interest on the mortgage debt and taking account of changes in inventories.

Corn Belt and wheat farmers, particularly winter wheat farmers, have been able to take greatest advantage of improved mechanical power and equipment. Dairy and cotton farmers, on the other hand, have not mechanized as much as Corn Belt and wheat farmers and have not reduced production costs in proportion. Indications of changes in production efficiency are shown by changes in the cost of production per unit of product adjusted for changes in the price level. The index of total costs of production per unit of product in 1945 and 1946 (in terms of 1930-44 average dollars) was around 60-80 percent of the prewar (1937-41) cost on wheat and Corn Belt farms compared with around 100-120 for cotton and dairy farms.

In terms of current dollars, operating expense per unit of production has increased on most farms because of the higher price levels in 1946 than in 1937-41. But because prices received by farmers have gone up more rapidly than prices paid and because of the increasing efficiency of production on many farms, operating expense per dollar of gross income was lower in 1945 and 1946 on all types of farms. Wheat and Corn Belt farmers have cut operating expenses per dollar of gross income by more than half since 1937-41 compared with 10-25 percent reduction for cotton and dairy farmers.

Price, cost and production shifts per farm for the past decade have left farmers more dependent than ever before upon high-level industrial employment and incomes to maintain a large market for farm products. For all farms in the United States together, out-of-pocket production expenses now are nearly double their prewar (1937-41) level. The increase has been even greater on some types of farms. These advances in cash costs will become of particular concern to farmers in a period of declining prices for farm products.

To illustrate their effects, let us assume that the 1946 level of production expenses will continue several years and look at the gross farm income that would be necessary to return a net income equal to the 1937-41 prewar average, which were generally regarded as much too low. The national net farm income during this 5-year period averaged $5.1 billion. With operating expenses of $12.0 billion (the 1946 level) such a net return would require a gross farm income of some $17.1 billion compared with $11.5 billion in 1937-41 and about 25 billion in 1946. With 1946 cost levels, some combination of production and farm prices averaging about 50 percent higher than the prewar would be required to return farm-operators as a group their prewar average net income. Total farm production is now about 20 percent greater than the 1937-41 average. Prices are about 115 percent above the prewar average.

The relative position of different groups of farm producers would be materially different with a downward adjustment in gross income. Cash grain farmers in the Corn Belt, for example, could obtain their 1937-41 average net returns with a gross income some 20 percent above prewar. They have increased their production nearly 40 percent during the war. With this level of production, they can maintain prewar net incomes even with a considerable price decline.

Cash production expenses on winter wheat farms in the Southern Plains increased less during the war period than did those of the other types of farms for which data are available. The 1937-41 average production and income on these farms was relatively low, however, and a gross farm income about a third greater than prewar would be needed to meet present expenses and return a net income comparable to the 1937-41 average. Production now is nearly triple the 1937-41 average of these farms. But this is a relatively high risk area and farmers in high risk areas necessarily depend upon high returns in good years to carry them through years of adversity.

A decidedly different situation exists on the Black Prairie Cotton farms where production per farm has been low the past several years. In 1946, production was only 70 percent of the 1937-41 average, largely because of low yields due to unfavorable weather. Hired labor is an important cost item on these farms and accounts largely for the two-fold increase in production expenses during the past 7-9 years. Unless production per farm is increased above the present level, or operating expenses are reduced substantially, these farmers would need prices for the things they sell more than double their 1937-41 level to return even the prewar average net farm income of $1,250. Similar comparisons can be made for any of the other types of farms with the data contained in table 4.

These comparisons emphasize the importance of maintaining a high volume of production per farm in obtaining a relatively low cost of production per unit of product. Reducing unit costs of production will be more important in 1947 and the years following than during the war.

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# E Farm Cost SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

FCS - 3 BAE OCTOBER 1947

Approved by Outlook and Situation Board, October 13, 1947

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## GENERAL SITUATION

Farm costs are at an unprecedented high level. They have been on the increase for several years and the prospect for next year is generally upward for most cost items. Since 1939 farmers' out-of-pocket operating expenses have risen from 9 to 25 percent a year. Total farm operating costs for the country as a whole were nearly 2.5 times greater in 1946 than in 1935-39. They mounted from an average of 5.2 billions in the prewar period 1935-39 to nearly 12.8 billions in 1946. These costs are estimated at 14.9 billions in 1947. Some further increase is expected in 1948.

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Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | All commodities 1/ | Farm machinery | Building material other than house | Equipment and supplies 2/ | Feed | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|
| 1910 | 77 | 66 | 68 | 91 | 86 | 99 | - | 82 |
| 1911 | 81 | 66 | 70 | 90 | 99 | 99 | - | 83 |
| 1912 | 77 | 66 | 70 | 90 | 84 | 100 | 66 | 86 |
| 1913 | 80 | 66 | 68 | 90 | 99 | 102 | 63 | 88 |
| 1914 | 78 | 66 | 63 | 89 | 94 | 100 | 64 | 86 |
| 1915 | 82 | 68 | 69 | 95 | 93 | 112 | 77 | 87 |
| 1916 | 98 | 70 | 79 | 116 | 120 | 120 | 92 | 96 |
| 1917 | 119 | 80 | 93 | 141 | 170 | 137 | 96 | 119 |
| 1918 | 137 | 102 | 109 | 163 | 179 | 170 | 123 | 150 |
| 1919 | 151 | 105 | 128 | 162 | 195 | 182 | 181 | 175 |
| 1920 | 137 | 109 | 139 | 170 | 127 | 186 | 98 | 205 |
| 1921 | 111 | 105 | 105 | 137 | 90 | 156 | 86 | 131 |
| 1922 | 109 | 93 | 107 | 126 | 114 | 129 | 84 | 129 |
| 1923 | 111 | 97 | 109 | 123 | 124 | 126 | 92 | 144 |
| 1924 | 112 | 101 | 109 | 120 | 131 | 120 | 97 | 147 |
| 1925 | 116 | 101 | 111 | 126 | 131 | 129 | 111 | 149 |
| 1926 | 115 | 101 | 109 | 130 | 127 | 126 | 138 | 152 |
| 1927 | 113 | 101 | 108 | 127 | 128 | 121 | 127 | 152 |
| 1928 | 117 | 101 | 107 | 124 | 137 | 131 | 115 | 152 |
| 1929 | 116 | 100 | 107 | 123 | 134 | 130 | 119 | 153 |
| 1930 | 111 | 100 | 105 | 118 | 122 | 126 | 112 | 142 |
| 1931 | 97 | 99 | 94 | 104 | 86 | 115 | 98 | 110 |
| 1932 | 86 | 93 | 85 | 96 | 64 | 99 | 66 | 81 |
| 1933 | 85 | 91 | 87 | 93 | 71 | 96 | 61 | 72 |
| 1934 | 97 | 95 | 99 | 98 | 98 | 104 | 90 | 81 |
| 1935 | 100 | 96 | 97 | 97 | 105 | 102 | 99 | 88 |
| 1936 | 98 | 98 | 98 | 99 | 104 | 96 | 91 | 94 |
| 1937 | 107 | 101 | 105 | 102 | 121 | 102 | 124 | 107 |
| 1938 | 99 | 104 | 100 | 103 | 85 | 100 | 102 | 106 |
| 1939 | 96 | 101 | 100 | 99 | 85 | 100 | 84 | 105 |
| 1940 | 98 | 100 | 101 | 99 | 94 | 97 | 84 | 107 |
| 1941 | 103 | 103 | 109 | 104 | 101 | 100 | 80 | 131 |
| 1942 | 117 | 108 | 120 | 114 | 125 | 111 | 123 | 171 |
| 1943 | 128 | 111 | 128 | 121 | 150 | 120 | 156 | 224 |
| 1944 | 136 | 114 | 138 | 126 | 165 | 121 | 175 | 268 |
| 1945 | 137 | 116 | 141 | 128 | 163 | 121 | 181 | 297 |
| 1946 | 151 | 120 | 158 | 132 | 194 | 124 | 190 | 321 |
| Jan. | 138 |  |  |  | 165 |  |  | 307 |
| Feb. | 139 |  |  |  | 167 |  | 186 |  |
| Mar. | 139 | 116 | 144 | 128 | 168 |  | 191 |  |
| Apr. | 140 |  |  |  | 169 | 122 | 191 | 307 |
| May | 146 |  |  |  | 182 |  | 192 |  |
| June | 150 | 118 | 151 | 129 | 191 |  |  |  |
| July | 159 |  |  |  | 227 |  |  | 321 |
| Aug. | 161 |  |  |  | 231 |  |  |  |
| Sept. | 157 | 121 | 156 | 133 | 214 | 127 | 189 |  |
| Oct. | 159 |  |  |  | 210 |  |  | 321 |
| Nov. | 161 |  |  |  | 210 |  |  |  |
| Dec. | 163 | 123 | 180 | 135 | 204 |  |  |  |
| 1947 |  |  |  |  |  |  |  |  |
| Jan. | 163 |  |  |  | 196 |  |  | 339 |
| Feb. | 169 |  |  |  | 192 |  | 229 |  |
| Mar. | 176 | 128 | 218 | 138 | 212 |  | 239 |  |
| Apr. | 179 |  |  |  | 219 | 136 | 240 | 337 |
| May | 178 |  |  |  | 215 |  | 239 |  |
| June | 183 | 138 | 218 | 148 | 229 |  |  |  |
| July | 184 |  |  |  | 235 |  |  | 343 |
| Aug. | 188 |  |  |  | 247 |  |  |  |
| Sept.. | 193 |  |  |  | 264 |  |  |  |
| Oct. |  |  |  |  |  |  |  | 343 |
| Nov. |  |  |  |  |  |  |  |  |
| Dec. |  |  |  |  |  |  |  |  |

---

1/ Excluding wages.

2/ Based on prices paid by farmers for 16 items including binder twine, lead arsenate, milk pails, pitchforks, gasoline for autos and trucks, motor oil, and tires, and other similar items used on farms for production.

Note:- For a list of items included in this table see "Agricultural Prices" Bureau of Agricultural Economics, April 29, 1946.

It should be noted however that some cost items such as feed, seed and to some extent labor are represented in both farm income and farm expenses. Higher costs for feed to some farmers mean higher incomes to others. And farm production and farm product prices also have risen to unprecedented levels in the last few years. In 1946 farm production was the highest on record, about 26 percent higher than the 1935-39 pre-war average. Farm production in 1947 is slightly below that of 1946 mostly because of the smaller corn crop this year. The index of farm product prices in 1947 is expected to average nearly 160 percent above the 1935-39 average. This will be the highest on record and nearly 20 percent above the previous high of 1946. As a result gross farm income in 1947 is expected to exceed 34 billions. Gross farm income in 1946 was 28.9 billions; nearly 180 percent above the 1935-39 average.

Three harvest seasons have nearly passed since the close of the war and the adjustments from war to peace-time conditions have been much slower than the general public had thought they would be. Because of the continued need for farm products at relatively higher prices there is real opportunity for most farmers, despite the unprecedented high level of farm costs and the expected increase in these costs next year.

More efficient methods of production, plus improved practices, use of better varieties of seeds, optimum amounts of fertilizer, more careful insect and disease control, increased use of labor-saving equipment and more timely operations are among the practices which are available to the individual farmer for reducing costs and increasing returns. During the next year or two it will pay farmers well to select and cull livestock and pay the utmost attention to careful feeding. It will be profitable during the next year to make maximum substitutions of roughage and pasture for concentrate feeds. It will also pay to substitute high protein feeds for grains.

The short feed-grain crop in this country and the generally short crops in foreign countries plus the high demands for both food and fiber will make local adjustments more important than ever before. The total supply of concentrates available for feed and other purposes for the 1947-48 season is expected to be about 142 million tons compared with 163 million tons last year. This is a reduction of about 13 percent below a year ago. But this year there is the biggest hay supply per animal unit on record. Pastures and stalk fields also are good. It will be relatively more profitable to substitute hay and pasture for feed grains, and to make increased use of high protein concentrates some of which are cheaper than corn considering their feeding value. Farmers also will find it advantageous to cull livestock carefully and to avoid waste in feeding.

Poultrymen and dairymen in deficit feed areas will be particularly hard pressed. In mid September 1947 mixed dairy feed was $4.42 and laying mash was $5.25 per 100 pounds. These are about 12 and 15 percent higher respectively than a year ago, whereas feed grain prices received by farmers generally were nearly 40 percent higher than a year ago. Thus, the full rise in prices of feed grains has not yet been reflected fully in the prices of mixed feeds. Higher prices of mixed feeds can be expected during the first half of next year.

Farm wage rates in 1946 were 321 percent of the prewar average, and in 1947 have averaged about 8 percent higher than in 1946. Farm wage rates in 1948 probably will continue near this 1947 level. Farmers who depend chiefly on hired workers will have to plan carefully for their supplies of labor next year. Foreign workers will not be available for seasonal farm work under a government-financed transportation program in 1948, and some local labor shortages probably will occur.

More new machines probably will be available to farmers in 1948 than in any previous year. Production of farm machinery in 1947 exceeds the previous record output of 1946 and prospects are favorable for a continued high level of production in 1948. Producers of machinery are giving more attention to power and machinery requirements of small farms and new type farm tractors and machines of small size should be available in increased numbers in 1948.

Prices of new farm machinery and tractors are considerably higher than in prewar years. Prices of gasoline have increased by about 15 percent with greater increases in prices of distillate and diesel fuel. The combined average cost of using a tractor in 1946 was about 40 percent above prewar average. These costs are about 50 percent above prewar and are expected to continue at about this level in 1948.

Although prices of farm products have increased sharply in recent years prices of horses and mules have declined and in 1947 were considerably below the 1935-39 average. The competitive position of horse and mule power compared with mechanical power has been responsible for this decline. It also has been responsible for the decline in numbers of horses and mules. In recent years colt crops have been declining and exports of work animals have been increasing.

Although production of some seeds was considerably greater in 1947 than in 1946 average production for most seeds was below the 1941-45 average production. Dealers' stocks were also lower than in 1941-45. In view of the probable strong demand and the current production and stocks of seeds, prices paid for most seeds during the remainder of 1947 and the spring of 1948 probably will continue at high levels. Prices paid by farmers for seeds during 1947 were about 13 percent higher than those paid during 1946, but about 200 percent above the 1935-39 average, Supplies of fertilizer for the year ending June 30, 1948 are expected to be from 5 to 10 percent higher than those of a year earlier and the largest on record. Farmers will pay higher prices for fertilizer during the first half of 1948 than they did during the first half of 1947, but the relationship between fertilizer prices and farm product prices during the next year should be favorable for continued increases in use of fertilizer.

Lumber production increased materially during the last year. Stocks at mills, wholesalers and retailers also have increased. Lumber production for 1947 is estimated at approximately 36.5 billion board feet compared with 36.1 billion for 1946 and 28.1 billion board feet for 1945. Total stocks at retail and wholesale yards and mills on January 1, 1947 were 6.8 billion board feet compared with 4.6 billion a year earlier. They had increased by 1.3 billion board feet (nearly one-fifth) from January 1, to April 1, 1947. Supplies of hard wood flooring, 2 x 4's,and 2 x 6's are tight and there is a tremendous backlog of millwork orders. Lumbering costs may be slightly higher next year because good timber is not quite as accessible as in previous years due to the large takeoff during the past few years. But supplies are probably such as to offset the influence of these higher costs and to hold prices in check.

Building materials other than lumber have also been produced in increasing quantities the past few years, but not in sufficient quantities to meet full demands. It is not expected, however, that the shortage of these items will prevent farmers from obtaining essential supplies.

Supplies of tin cans, wooden containers, paper, open mesh and cotton bags, insecticides and fungicides in general should be equal to or larger than last year and sufficient to meet demands. Prices of most of these items probably will not be far different in the early part of 1948 from those presently quoted.

Farm land values for the country as a whole are now almost double their prewar level and about 5 percent below the inflationary peak of 1920. Land rentals are more than double the prewar level and are higher than for any previous year. About one-third of all farms bought during 1946 were mortgaged for 50 percent or more of the sales price. This ratio has changed very little since 1943 despite a 40 percent increase in land values.

Large mortgage-debts represent heavy fixed costs to the farm owner for interest and principal payments and high rentals represent heavy fixed costs to the tenant. These costs would become increasingly burdensome if net farm incomes and farm product prices decline.

## Farm Labor

Farm wage rates in 1947 are the highest on record, averaging about 8 percent above 1946. But farm wages have risen only about one-half as much as prices of farm products during the past year. Farm wage rates in 1947 are about 345 percent of the 1935-39 average whereas prices of farm products probably will average about 260 percent of 1935-39. There has been some further increase in the farm labor supply during the year and farm employment is showing a moderate increase for the second straight year. Estimated production per farm worker this year is 33 percent above 1935-39 but slightly below the record level of 1945 and 1946 (see table 1).

Labor costs per unit of product are higher in 1947 than a year ago, owing to the rise in farm wage rates and decline in production per worker. However, the increase in gross farm income per unit of product has risen much faster than has the labor cost per unit of product.

The farm labor situation in 1948 is not likely to be greatly different from that in 1947. Farm wage rates are expected to continue near this year's level. There may be some further increase in the farm labor supply and a slight increase in farm employment. Farmers probably will pay the largest total wage bill of record next year. With favorable weather, production per worker in 1948 should match this year's level. On the average, labor costs per unit of farm product in the year ahead should bear about the same relationship to gross income per unit of product as in 1947.

Farmers who depend chiefly on hired workers will have to plan carefully for their supplies of labor next year. Foreign workers will not be available for seasonal farm work under a government-financed transportation program in 1948, and some local labor shortages will probably occur. Such labor shortages may be particularly noticeable in cases where weather conditions upset normal harvesting seasons.

In view of continued high farm wage rates and relatively scarce labor supplies, farm employers will need to emphasize improved labor relations and increased productivity of hired workers next year. This will be good business also over the longer period ahead because farm wage rates usually decline less rapidly than prices of farm products.

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-47 inclusive
(Index numbers 1935-39 = 100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates | Ratio farm wage rates to | |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ | | Production per worker | Gross farm income per worker |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 107 | 110 | 107 | 97 | 98 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 131 | 112 | 94 |
| 1942 | 95 | 94 | 99 | 122 | 128 | 171 | 134 | 91 |
| 1943 | 94 | 94 | 94 | 119 | 127 | 224 | 176 | 95 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 268 | 199 | 106 |
| 1945 | 90 | 92 | 82 | 123 | 137 | 297 | 217 | 110 |
| 1946 | 92 | 94 | 84 | 126 | 137 | 321 | 234 | 106 |
| 1947 4/ | 93 | 95 | 86 | 124 | 133 | 346 | 260 | 99 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Preliminary.

## Farm Power and Machinery

Production of farm machinery in 1947 is expected to exceed the previous record output of 1946 and prospects are favorable for a continued high level of production in 1948. Even with higher exports of farm machinery in 1947 more new machines are available to U. S. farmers in 1947 than in any previous year.

Use of mechanical power on farms on a large scale first became important in World War I. Then, as now, feed prices, wage rates, and farm incomes were at high levels, and domestic demand and exports of the products of our farms were at high levels. From 1920 to 1940 tractor numbers increased by more than 1,200,000. But the demand and production both had stepped up by 1940 and the increase in numbers of tractors on farms from 1940-47 was about the same as from 1920 to 1940, a period three times longer. Machinery is now better adapted to farm work than previously. Producers of farm machinery are now giving increased attention to the power and machinery requirements of small farms. New type farm tractors and machines of small size should be available in considerable numbers in 1948. Also, there has been an increased production of garden tractors. Production of garden tractors in prewar years usually accounted for less than 5 percent of our total tractor output, but in 1946 about one-third of the tractors sold for domestic use were of the garden type.

Number of tractors on farms January 1, 1947 was about 117 percent greater than the average of 1935-39. While tractor numbers were increasing horse and mule numbers declined from a prewar average of 15,750,000 in 1935 39 to 10,024,000 in 1947, a decline of 36 percent.

Conditions in recent years have furthered the advantage of mechanical power over horse and mule power in a number of ways. It costs more now to operate a tractor than in prewar years, but the increase has been much less than the increase in costs of keeping work animals. Prices of new tractors and tires are now about one-third above the 1935-39 average. Prices of gasoline have increased by about 15 percent with greater increases in prices of distillate and diesel fuel. Total costs per tractor in 1946 were about 40 percent above the prewar average, and in 1947 are about 50 percent higher.

The per head cost of keeping horses and mules in 1946 with farm feeds, labor, and other items valued at current rates was estimated at 83 percent above the prewar average. Costs in 1947 are about double the prewar costs per head.

Feed prices are important costs in keeping horses and mules. For the entire country it takes about 25 bushels each of corn and oats and about 2 tons of hay for each animal annually. Feed costs in 1947 based on current prices and on these quantities and kinds of feed were about 146 percent above the prewar costs (see table 2). Most other items of cost other than labor of keeping work animals have increased less, however, than have feed costs.

Notwithstanding the marked increase in prices of farm products, prices of horses and mules in 1947 are below the average of 1935-39, and many animals in condition for further farm work are being sold for slaughter. Exports of horses and mules in recent years have been at high levels, and the increasing slaughter and exports have contributed materially to the high rate of decline of horse and mule numbers.

Largely because of the competitive position of horse and mule power versus mechanical power in the years immediately ahead and the present low prices of horses and mules, the colt crop in 1946 was only one-third of the prewar average and less than one-eighth of the colt crops of World War I years. There were only 255,000 colts under one-year of age on farms January 1, 1947 compared with 744,000 for the 1935-39 average. The colt crop of 1947 is even smaller than the 1946 crop. Thus, the decline in horse and mule numbers which has been continuous since 1918 will continue for some years.

An important factor contributing to the increase in tractor numbers has been the shortage of farm laborers and the greatly increased farm wage rates. Most of our important labor-saving machines are operated largely with tractor power and the rate of increase of these machines since the prewar years has been even greater than for tractors.

Table 2.- Estimated cost of using farm tractors and of keeping horses and mules, United States, 1935-39 average and 1940-46

(1935-39 = 100)

| Calendar year or period | Horses and mules, all ages | | | Number colts on farms under one year of age Jan. 1 | Farm tractors | | | |
|---|---|---|---|---|---|---|---|---|
| | Number on farm Jan. 1 | Value per head Jan. 1 | Feed cost per head 1/ | | Number on farm Jan. 1 | Prices paid by farmers for: | | |
| | | | | | | New tractors 2/ | Gaso-line | Tires |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 90 | 94 | 101 | 124 | 94 | 95 | 91 |
| 1941 | 90 | 81 | 105 | 98 | 135 | 99 | 99 | 94 |
| 1942 | 87 | 78 | 133 | 85 | 152 | 104 | 103 | 117 |
| 1943 | 84 | 95 | 175 | 69 | 169 | 104 | 104 | 129 |
| 1944 | 80 | 98 | 192 | 62 | 178 | 107 | 104 | 135 |
| 1945 | 76 | 86 | 190 | 54 | 195 | 109 | 103 | 129 |
| 1946 | 70 | 80 | 221 | 41 | 208 | 122 | 106 | 131 |
| 1947 | 64 | 84 | 3/ 246 | 34 | 4/ 217 | 134 | 5/ 115 | 5/ 130 |

1/ Based on 25 bushels each of oats and corn and 2 tons of loose hay.
2/ Tractor prices are for medium size (20-29 DHP) wheel tractor equipped with rubber tires.
3/ Average of the first eight months.
4/ Preliminary estimates.
5/ Average prices paid in March and June.

## Feed Costs

Feed grain costs are at record high levels. In September of this year the index of feed grain prices received by farmers was 24 percent above the record high point of June 1920 following World War I, and nearly three and one-half times the 1935-39 average. Further, the index has risen steadily over the past year. In September 1947, it was 77 percent above February and 40 percent above September 1946.

The general index of prices paid by farmers for feeds has been rising for several months and in September 1947 was about 30 percent higher than last winter, and about 25 percent higher than a year ago. The index of feed grain prices received by farmers probably more nearly represents the general level of feed grain costs in surplus feed areas than in deficit feed areas.

The average price paid by farmers for 100 pounds of mixed dairy feed in September 1947 was $4.42 compared with $3.62 in February 1947 and $3.94 in September 1946, and less than $2.00 before the war. The price of laying mash in September was $5.25 compared with $4.24 in February and $4.56 in September last year. The prices paid for mixed feeds in August has probably not yet fully reflected the rise in feed grain prices and a further rise in mixed feed prices can be expected.

Livestock and livestock product prices in September 1947 were only slightly above the 1946-47 fall and winter level while the index of feed grain and hay prices had risen about 35 percent. In the winter of 1946-47 the ratio of the index of livestock prices to the index of feed prices was about one-fifth higher than in 1935-39 but since then there has been a gradual decline and in September 1947 the index ratio was slightly over 80 percent of the prewar average (see table 3). Relative to conditions in 1935-39, this feeding ratio is unfavorable for feeding livestock.

The supply of concentrates available for feed and other purposes for the 1947-48 feeding period is expected to total about 142 million tons compared with 163 million tons a year ago. However the animal units to be fed are expected to total about 157 million compared with 161 a year earlier. Thus, the supply per animal unit is about 11 percent less than a year ago but still is about equal to the average for the past 10 years (see figure 1). The quality of the corn crop however is below average and it may take more feed per unit of product than in an average year. Supplies of byproduct feeds will be about as large as the record production of last year. During the coming feeding season high protein concentrates will constitute a larger than usual percentage of all concentrates fed. Hay supplies per animal unit are the highest on record but the general quality of hay may be lower than usual.

When livestock feed ratios are low farmers tend to feed less grain to the livestock they have and to reduce the number of livestock raised. A low hog corn price ratio in the fall is usually followed by a decrease in the sows farrowing the following spring. In general, a low ratio results in more careful feeding with the result that less feed is used per unit of product.

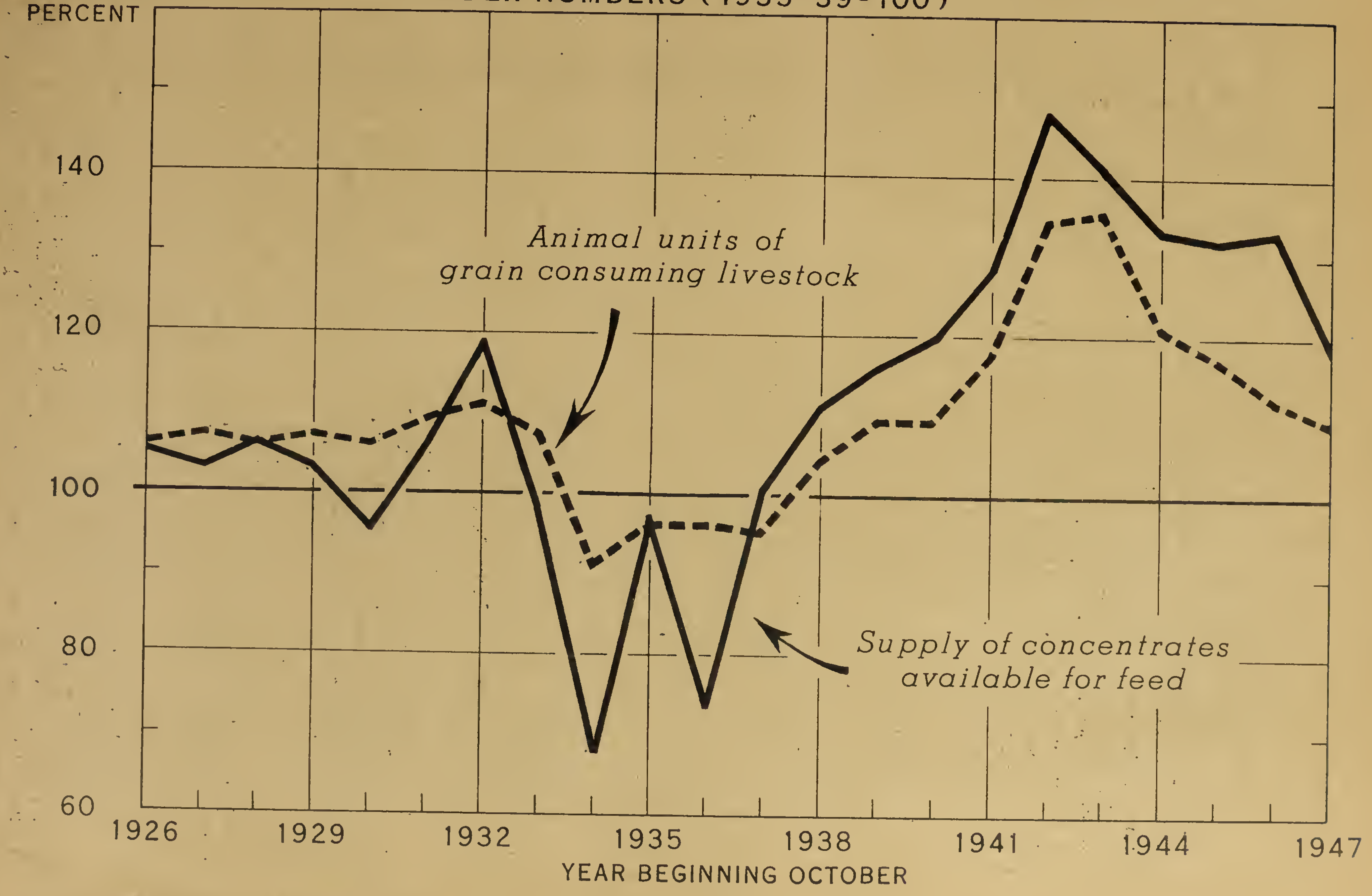
Table 3.- Prices of livestock and feed, 1927-47
(Index numbers 1935-39 = 100)

| Year | | Livestock and livestock product prices 1/ | Feed grains and hay prices 1/ | Ratio of livestock prices to feed prices |
|---|---|---|---|---|
| 1927 | | 127 | 121 | 105 |
| 1928 | | 136 | 130 | 105 |
| 1929 | | 138 | 126 | 110 |
| 1930 | | 117 | 113 | 104 |
| 1931 | | 85 | 78 | 109 |
| 1932 | | 63 | 51 | 124 |
| 1933 | | 62 | 60 | 103 |
| 1934 | | 72 | 100 | 72 |
| 1935 | | 98 | 113 | 87 |
| 1936 | | 103 | 107 | 96 |
| 1937 | | 109 | 132 | 83 |
| 1938 | | 97 | 75 | 129 |
| 1939 | | 93 | 73 | 127 |
| 1940 | | 96 | 86 | 112 |
| 1941 | | 120 | 94 | 128 |
| 1942 | | 148 | 117 | 126 |
| 1943 | | 172 | 155 | 111 |
| 1944 | | 166 | 175 | 95 |
| 1945 | | 174 | 170 | 102 |
| 1946 | | 206 | 206 | 100 |
| | Jan. | 175 | 173 | 101 |
| | Feb. | 173 | 175 | 99 |
| | Mar. | 174 | 180 | 97 |
| | Apr. | 176 | 180 | 98 |
| | May | 178 | 198 | 90 |
| | June | 183 | 206 | 89 |
| | July | 212 | 257 | 82 |
| | Aug. | 225 | 237 | 95 |
| | Sept. | 214 | 233 | 92 |
| | Oct. | 256 | 234 | 109 |
| | Nov. | 252 | 197 | 128 |
| | Dec. | 252 | 196 | 129 |
| 1947 | Jan. | 241 | 194 | 124 |
| | Feb. | 238 | 195 | 122 |
| | Mar. | 250 | 224 | 112 |
| | Apr. | 242 | 235 | 103 |
| | May | 236 | 230 | 103 |
| | June | 238 | 253 | 94 |
| | July | 245 | 267 | 92 |
| | Aug. | 253 | 285 | 89 |
| | Sept. | 270 | 313 | 86 |

1/ Calendar year. The factors for converting index numbers from August 1909-July 1914= 100 to 1935-39= 100 are: livestock and livestock products, 116.6; feed grains and hay, 94.8.

## FEED SUPPLY TO NUMBER OF GRAIN CONSUMING ANIMALS, UNITED STATES

INDEX NUMBERS ( 1935-39 = 100 )



U. S. DEPARTMENT OF AGRICULTURE FIGURE I NEG. 46110 BUREAU OF AGRICULTURAL ECONOMICS

In general numbers of grain consuming livestock tend to adjust to the feed supply. The supply of concentrates has been larger in relation to the number of livestock since 1938, but more livestock product per animal has been produced.

Feed prices in general will continue high during the coming winter although not necessarily at the record levels recently attained and livestock feed ratios probably will continue less favorable than in the recent past. Farmers will find it to their advantage to avoid waste in feeding grain and to make increased use of high protein concentrates, some of which are cheaper than corn considering their feeding values. On some farms oats and barley will have to be substituted for corn to a greater extent than usual. This does not usually involve any particular difficulty except that for most livestock small grain should be ground. If the hay crop has been put up in good condition it will enable farmers to reduce the amount of grain fed and to carry their cattle, sheep and workstock through the winter with a minimum of grain. Fall pastures and stalk fields are generally good this year and will furnish much feed. There will probably be an unusually large amount of corn silage and corn fodder and stover because of the poor corn growing season. Part of the corn will be chaffy and late planted corn may be soft. The latter will have to be fed to hogs and cattle before it spoils in the spring. Thus, a variety of feeding problems will present themselves to livestock producers depending upon their different situations. Dairymen and poultry producers in deficit feed areas will be especially hard hit because of high feed prices and possibly actual feed shortages. There may be some liquidation of poultry flocks.

The present situation of low livestock feed ratios is probably temporary. It is mainly due to a poor corn crop and overseas demand for food grains. If an average yield of feed grains is obtained in 1948 the feed supply will be larger than our domestic livestock requirements and the livestock feed ratios will be reversed. Our livestock population has been decreasing and is low relatively to our ability to produce feed under average weather conditions. The supply of meat per capita in 1948 is expected to be 5 to 10 percent below 1947.

This is a year when close attention to balanced rations will pay high dividends. Substituting alfalfa meal and high protein feed for corn and some other grains in the general feeding program, particularly hogs and feeder cattle this fall will reduce costs and increase income. Closer than usual culling of poultry flocks and of dairy herds will also pay.

Maximum use of hay and forage in wintering beef cattle and in growing young dairy cattle will be followed by many farmers. Less grain will be used in fattening cattle for market. Fewer "finished" cattle will be coming to market next spring and summer. Hogs will be lighter in weight except in a few areas where large quantities of soft corn may have to be fed rather soon in order to utilize it before it spoils. The greatest pinch in feed supplies will come next spring and summer. Plans should be laid to make the maximum use of pasture by all kinds of livestock and poultry next spring and summer. Careful attention to good feeding practices in the months ahead will result in lower costs as well as saving grain.

## Seeds

Prices paid by farmers for seeds during 1947 were about 13 percent higher than in 1946, but over 200 percent higher than the average for the prewar period 1935-39. In view of probable continued strength in demand and because of limited current production and stocks of seeds, prices paid during the remainder of 1947 and the spring of 1948 will probably continue at relatively high levels for most seeds.

Production of 12 principal legume and grass seeds in 1947 was about 6 percent below that of 1946, but only 2 percent below the 1941-45 average. The production of principal cover crop seeds (Austrian winter peas, all vetches, common rye grass, and crimson clover) was about 2 percent lower in 1947 than in 1946, but 18 percent larger than the average production of 1941-45. The production of Kentucky bluegrass in 1947 was about three times the extremely short crop of 1946 and about one-fifth larger than the annual average for the 5-year period 1941-45. The 1946 crop was the smallest since 1934. Total production of Kentucky bluegrass, orchard grass, timothy and red top this year was about 20 percent above that of 1946, and slightly above the 1941-45 average. Stocks of 34 legume, grass and cover crop seeds in the hands of dealers on June 30, 1947 were 23 percent smaller than a year ago and 44 percent below the 1941-45 average. Thus, even more than a year ago, demand will fall more heavily than usual on the current year's production.

## Fertilizer

Farmers paid from 10 to 12 percent more per ton for fertilizer during 1947 than they paid in 1946 and slightly higher prices may be expected in the first half of 1948. But prices received by farmers had risen by 23 percent during the first nine months of 1947 over 1946 so that the ratio of farm product prices to prices paid for fertilizer was slightly higher than a year ago. Further increases that have occurred in prices of fertilizer materials since last spring probably will result in higher prices to farmers for fertilizer. But the relationship between fertilizer prices and farm product prices during the next year will be favorable for continued increases in fertilizer consumption.

Record breaking supplies of fertilizer were available for use on the 1947 crop. Supplies for the year ending June 30, 1948 are expected to be from 5 to 10 percent above those of the previous year. The greatest increase in the supply of fertilizer nitrogen will be in liquid forms which are used largely for producing ammoniated superphosphates; some is used for direct application to certain crops. Supplies of solid nitrogen materials may be increased only slightly during the year. Several new phosphate plants have been built and others have been expanded. Some expansion of potash plants has occurred and greater efficiency in production is being obtained. It is also expected that imports of potash will be increased. All of these developments should make possible the production of higher grade mixed fertilizers than have been available generally in previous years.

## Lumber, Containers and Farm Supplies

Farmers and people in general have been anxiously watching the trend and general level of production, stocks and prices of lumber, building materials and related items; in the hope that these items would be available soon in sufficient quantity for their pent up needs. Plan after plan is ready to be put into effect as soon as some of the more critical items in the builders list become available in adequate quantities.

The general farm building supply situation, particularly for lumber, has been improving for sometime and supplies for most items look fairly promising for 1948. Farmers lumber supplies come mostly through retail yards. There are some exceptions such as the South where some farm lumber supplies come directly from the mill to the farm. On January 1, 1940 retail lumber stocks were about 5.9 billion board feet; about normal volume. By January 1, 1945 they had been reduced to 2.3 billion board feet and the following year to 1.3 billion board feet. Furthermore, normal distribution was upset to the extent that many retailers had practically nothing. On the average there was about enough lumber in each retail yard, assuming equal distribution, June 30, 1946 to supply lumber for the construction of less than 3 average homes; far too little.

By January 1, 1947 retail stocks had climbed to 2.1 billion board feet and had increased to about 3 billion by last April. Total stocks at retail and wholesale yards and mills showed similar increases. January 1 stocks were about 6.5 billion in 1945; 4.6 billion in 1946 and 6.8 billion in 1947. By April 1, they had increased by 8.1 billion, or nearly one-fifth.

Lumber production likewise has improved and is near a record. Production in 1946 was about 36.1 billion board feet compared with 28.1 billion in 1945. Estimates for 1947 are about 36.5 billion board feet; equal to the record production of 1941. Lumber production in 1948 may be down slightly. Raw material supplies are sagging slightly and timber is not quite as accessible due to large take off the past few years. This means higher logging costs.

Hard wood production, except flooring, has been up the last few years and supplies are adequate to meet needs. Supplies of hardwood flooring, 2 x 4's, and 2 x 6's are tight and prices are well above (more than double) prewar prices. There is also a tremendous backlog of millwork orders and many firms are reluctant to accept additional contracts.

Although production of barbed and woven wire, fencing, nails, staples, bale ties, galvanized roofing and siding, wire netting, and pipe and related items has been at a high rate during 1947 the supply of most merchant trade products has not fully met demands. However, the supply has been better than at any time since the beginning of the war. Pipe, because of the extraordinary demands for housing and other construction and increased industrial uses, has been in the tightest supply. Distribution has also aggravated the situation in some areas. Although production of bale ties and nails is at an exceptionally high rate, demands continue to exceed manufacturers' ability to produce.

If additional U. S. government loans and aid are made to western Europe the demand for some building materials and supplies probably will be increased. However this probably would not cause any material shortages of lumber, containers, or farm supplies that would affect agricultural production. It is not expected that a shortage of supplies of those items will prevent farmers from meeting essential needs.

Imports of burlap for bags this fall and next spring are expected to be somewhat higher than for the same period last year, and the supply should be adequate. Supplies of tin cans, wooden containers, paper, open mesh and cotton bags, should be equal to or larger than last year and sufficient to meet demands.

## Insecticides and Fungicides

Prices of materials used for control of insects and of plant diseases have continued to rise during 1947. They averaged about 20 percent higher in 1947 than in 1946. The 1946 prices were only about 3 percent above those of 1945. A slight increase in prices of these materials is expected in 1948. DDT is one striking exception. The price of DDT was about 15 percent lower in 1947 than in 1946.

There has been considerable variation in the recent price increases of these products as some products have been in relatively shorter supply. Price increases in 1947 of two important materials used in insect control varied from one-eighth to one-fourth. Some manufacturers of insecticides from plant sources are attempting to reduce prices of their products to improve their competitive position with producers of synthetic products.

It appears that for 1948 nicotine compounds will continue in short supply and will not be adequate to meet all of the needs for 1948. Other insecticides from plant sources, such as rotenone and pyrethrum, are expected to be available in sufficient quantities to meet the needs during 1948.

The supply of arsenicals, particularly lead arsenate and calcium arsenate, probably will be sufficient to meet the needs in 1948. The newer insecticides, such as DDT, chlordane, benzene hexachloride, chlorinated camphene, should be available in 1948 in amount fully adequate to meet estimated needs. Ample supplies of insecticides which contain fluorine, such as cryolite, sodium fluoride, sodium fluosilicate will be available for 1948. By 1948, materials such as naphthalene, paradichloro-benzene, etc., should be reasonably in balance with the needs. Sulphur, dust diluents, and oils used as insecticides or as carriers also should be available in adequate quantities. Newer soil fumigants and fungicides are expected to be generally available.

Some difficulty was experienced in 1947 in obtaining adequate supplies of raw materials for the manufacture of insecticides and fungicides, and in getting desirable distribution, because of shortages of transportation facilities and containers. Some of these factors may continue to affect the supply of certain of these materials in 1948. In general, however, the insecticide and fungicide industry has the capacity and the facilities for making and distributing most of the materials that may be required in 1948.

## Land Values and Rentals

Farm land values and rentals are expected to continue at high levels during the coming year. Land rentals in 1946 were more than double the prewar level and higher than for any previous year. With current farm product prices and incomes at new record levels, rentals for 1947 have increased further. Land rentals usually lag behind farm prices and farm incomes. When farm incomes rise, land rentals rise and when prices and incomes fall, rentals also fall; but they rise and fall a year or two after incomes and prices. Therefore, the present high rent level is likely to continue into the coming year. High rentals mean higher costs for tenants. Also important are the longer-run fixed costs of many owner-operators who buy land at inflated prices. Debt obligations on land purchased at inflated prices may prove burdensome when farm product prices and incomes decline.

Farm land values have been increasing steadily since 1941 and are now almost double their prewar level. During the year ended July 1, 1947 the increase was 10 percent, bringing the United States index (1912-14 = 100) to 162, 95 percent above the 1935-39 average and only 5 percent below the 1920 inflationary peak (see table 4). Average values in all except the two North Central geographic divisions are practically at or above the 1920 level. Land values for the country as a whole increased 2 percent during the 4 months from March 1 to July 1, 1947, as further sharp increases in land values in the wheat and range livestock areas more than offset a slight falling off in values in the Southeast. If the currently high prices for farm products continue throughout most of next year, land values for the country as a whole will likely rise further and reach a level higher than following World War I. In some areas there has been evidence of strong buyer resistence to increasing land prices, but a large volume of sales was reported last year.

The present farm mortgage debt of about 5 billion dollars is not burdensome when considered in the light of current price and income levels. On January 1, 1947 the debt was only about one-fifth as great as the cash receipts from marketings. Following World War I, mortgage debt was about 100 percent of annual cash income.

However, many of the recent land buyers have incurred heavy debts. About one-seventh of all farms bought during 1946 were mortgaged for 75 percent or more of the sales price and about one-third had debts totaling 50 percent or more. These ratios have changed very little since 1943, despite a 40 percent increase in land values. Properties that had a debt of 53 percent or more of the July 1 average sales prices were actually mortgaged for as much as the full value of similar properties in 1941.

Large mortgage-debts represent heavy fixed costs for interest and principal payments. These would become increasingly burdensome with a decline in net farm incomes and farm product prices. A readjustment of the mortgage obligation and of these costs can usually be arranged for only after substantial principal repayments have been made.

If prices and incomes should drop sharply, tenants who have contracted to pay high cash rents may also find their fixed costs to be excessive. To avoid these difficulties, cash leases might be made with provision for adjustment of rental payments in line with prices of the principal products produced.

Table 4.- Farm real estate: Index numbers of estimated average value per acre by geographic divisions, 1920 and 1947, with selected comparisons 1/

| Geographic divisions | Index numbers 1912-14 = 100 | | | Increase | | | Ratio |
|---|---|---|---|---|---|---|---|
| | 1920 | 1947 March | 1947 July | 1915 to 1920 | 1941 to 1947 | July 1946 to July 1947 | July 1947 to 1920 |
| | | | | Percent | Percent | Percent | Percent |
| New England | 140 | 152 | 154 | 41 | 44 | 8 | 110 |
| Middle Atlantic | 136 | 144 | 145 | 36 | 59 | 8 | 107 |
| East North Central | 161 | 152 | 152 | 55 | 90 | 10 | 96 |
| West North Central | 184 | 119 | 123 | 75 | 89 | 12 | 67 |
| South Atlantic | 198 | 217 | 215 | 102 | 95 | 9 | 109 |
| East South Central | 199 | 246 | 243 | 101 | 111 | 11 | 122 |
| West South Central | 177 | 170 | 176 | 77 | 78 | 11 | 99 |
| Mountain | 151 | 149 | 154 | 54 | 97 | 11 | 102 |
| Pacific | 156 | 215 | 216 | 46 | 98 | 6 | 138 |
| United States | 170 | 159 | 162 | 65 | 91 | 10 | 95 |

1/ Farm land with improvements as of March 1, except where otherwise indicated.

## Interest, Taxes, and Insurance

Interest - Interest charges paid by farmers on their farm-mortgage debt during 1946 turned upward for the first time in nearly a quarter century. These costs appeared to move even higher in the first half of 1947. A higher farm-mortgage debt and a larger proportion of the debt owed to higher interest rate lenders were largely responsible for this trend. A continued increase in the farm-mortgage debt can be expected during 1947, if transfers of farms remain high, and if farmers increase further their expenditures for machinery and improvements. Many of these expenditures are made from borrowed funds or from savings which otherwise would be used to repay debts. The volume of new loans made has expanded materially, particularly those made by higher rate lenders. This has resulted in a higher average interest rate paid even though the interest rates charged by individual lenders have tended to remain relatively stable or to decline slightly.

Interest obligations on short-term or non-real-estate agricultural loans are on the increase because a greater volume of loans is being made. As of July 1, 1947 short-term farm loans held by the principal lending institutions amounted to 2,398 million dollars as compared with 2,094 million a year earlier; an increase of nearly 15 percent. These figures do not include loans made or guaranteed by the Commodity Credit Corporation. There is no indication of any material change in the rates of interest. The total interest charges on this non-real-estate debt were 12 percent greater in 1946 than in 1945. Because of increased borrowing, it is expected that interest charges for 1947 will be about 15 percent more than for 1946.

Taxes - Farm-property tax levies in 1946, payable largely late in 1946 and early in 1947, averaged about 12 percent higher than those of 1945. This is a slightly greater increase than took place the previous year. Property taxes have been moving upward in response to the postwar demand for increased services from State and local governments and the rising costs of providing such services. However, in 1947 general retail sales taxes were adopted by four additional States, and a number of States have increased gasoline and excise taxes. Thus it is expected that the course of property-tax levies in the next few years also will be influenced by the extent to which other taxes are used to finance increased expenditures.

Insurance - Although fire (and lightning) insurance on farm property is usually for about 75 percent of the value of the property at the time the insurance is written, insured farm property is presently covered for only about 60 percent of its value. Property values have increased faster than the amounts of insurance carried on such property.

The total insurance costs of farmers have probably increased as much as 10 percent, due to new policies and additional insurance obtained against fire, lightning, and windstorm, and especially to the record-high purchase of hail insurance on growing crops. The latter type of coverage is most popular when good crops and high prices are in prospect.

Over-all fire insurance costs have increased, but due to an increased volume of insurance, there has been a slight down-trend in costs per $100 of insurance of farm-mutual companies in recent years and an up-trend in the reserves of these companies. Any down-trend in values which might occur sometime in the future would no doubt be accompanied by higher losses for insurance companies; but over-insurance probably is not as prevalent today as it was in the 1930's. Moreover, the companies are in a better position now than then to meet higher losses without increasing their assessment charges against the farmer.

Although interest charges on debt obligations, taxes and insurance costs represent a relatively small proportion of the farmers total costs they represent fixed costs which might prove burdensome in periods of declining prices and when farm production is reduced either voluntarily or through crop failure. The general trend in these costs has been upward for several years. These costs lag behind many other costs and prices when a general decline sets in.

## Costs and Returns on Family-Operated Farms

Under present conditions of high level cost rates cost-reduction is the most promising only means of maintaining or increasing income to the individual farmer. This is especially true should farm product prices decline.

Individually, farmers can influence their net farm returns very greatly by cutting down the cost per unit of product marketed. This can be done by direct reduction in cost or indirectly by increasing the output per man and per farm. Generally the individual farmer has little or no direct control over cost rates. He must look for improved methods of production and to greater total output as a means of reducing the amount of cost goods used per unit of output. More efficient methods of production, improved practices, using better varieties of seeds, optimum amounts of fertilizer, more careful insect and disease control, increased use of labor-saving equipment, more timely operations, close selection and culling of livestock and careful feeding are among the practices which are available to individual farmers for increasing returns or reducing costs and will pay big dividends in the years ahead; particularly next year.

Most of these cost reducing processes are applicable to both big farms and small farms. Manufacturers of tractors and farm equipment are placing more emphasis than ever before on the production of items adaptable to use on small farms.

Tables 5 and 6 show the results of operations and the adjustments which have taken place during the past 17 years, 1930-1946, on 14 different types of farms. Each of these farms is representative in its size, production, operations and various aspects of the rank and file of farms of that type in the designated area. The 17 years covered by these statistics include a general depression, two severe drouths, and a World War and should characterize the "ups" and "downs" in farming in general. A 15-year base period (1930-44) is used here to avoid unduly emphasizing these three situations.

Total production generally increased over the 17-year period on all farms. The big increase came during the war when production was needed most. The greatest increase came generally on crop farms. Weather was generally favorable to production during the war years, but the increased production came mainly because farmers were able quickly to take advantage of many technological developments and improved practices adopted in the inter-war period. Even on the livestock farms, production increased by 15 to 30 percent during the war period (see central New York, southern Wisconsin dairy farms and Corn Belt hog-dairy farms). Acres and livestock per farm also increased and thus contributed to greater total output per farm.

Although milking machines and some other labor-saving equipment are used generally on livestock farms, livestock farmers have not had extensive labor-saving machinery and equipment available to them in the same degree as wheat, corn and general crop farmers. This means that the intensive labor using livestock enterprises are somewhat handicapped, particularly when wage rates are high. Central New York dairy farmers, for example, increased their total farm output by 28 percent from 1930-32 to 1944-46, and used 9 percent more total labor in 1944-46 than in 1930-32. Winter wheat farmers, on the other hand, increased total production during this period by 51 percent with no increase in labor. Cash grain farmers in the Corn Belt increased total production by 54 percent during this period and used 12 percent less labor.

The Corn Belt farmers and the wheat farmers particularly resorted to increased use of mechanical power and other labor-saving devices which permitted them to increase the size of their farm units and to further increase production per man and per farm. The use of hybrid seed corn and generally better varieties of other seeds also helped to increase output on these farms and to lower the general level of per unit costs.

Table 5.- Total production and operating expense per dollar of gross farm income, family-operated farms, by type, 1930-46

| Calendar year | Dairy farms |  | Corn Belt farms |  |  |  | Spring wheat farms (Northern Plains) |  |  | Winter wheat farms (Southern Plains) |  | Cotton farms |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Central New York | Southern Wisconsin | Cash grain | Hog-beef fattening | Hog-beef raising | Hog-dairy | Wheat-corn-livestock | Wheat-small grain-livestock | Wheat-roughage-livestock | Wheat | Wheat-grain sorghums | Southern Plains | Black Prairie | Delta of Mississippi |
|  | Total production<br>Index numbers (1930-44 = 100) |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1930 | 91 | 98 | 75 | 89 | 90 | 93 | 121 | 118 | 128 | 143 | 115 | 67 | 94 | 72 |
| 1931 | 102 | 83 | 88 | 86 | 102 | 98 | 98 | 58 | 95 | 158 | 181 | 100 | 126 | 99 |
| 1932 | 85 | 96 | 105 | 101 | 108 | 102 | 107 | 106 | 148 | 99 | 78 | 124 | 104 | 75 |
| 1933 | 83 | 86 | 71 | 85 | 92 | 86 | 62 | 74 | 66 | 87 | 45 | 106 | 98 | 78 |
| 1934 | 92 | 79 | 55 | 54 | 59 | 77 | 52 | 37 | 52 | 49 | 53 | 44 | 74 | 79 |
| 1935 | 99 | 98 | 98 | 89 | 103 | 94 | 86 | 91 | 88 | 39 | 37 | 89 | 89 | 82 |
| 1936 | 87 | 85 | 67 | 110 | 60 | 82 | 40 | 30 | 30 | 63 | 42 | 68 | 95 | 109 |
| 1937 | 99 | 100 | 121 | 99 | 107 | 100 | 76 | 95 | 62 | 47 | 57 | 135 | 124 | 142 |
| 1938 | 110 | 100 | 109 | 93 | 98 | 100 | 92 | 91 | 62 | 79 | 67 | 96 | 98 | 103 |
| 1939 | 97 | 94 | 109 | 88 | 94 | 104 | 109 | 77 | 82 | 43 | 62 | 77 | 108 | 107 |
| 1940 | 106 | 111 | 100 | 98 | 107 | 107 | 98 | 95 | 95 | 70 | 80 | 96 | 111 | 93 |
| 1941 | 103 | 103 | 114 | 105 | 108 | 105 | 127 | 144 | 125 | 151 | 136 | 128 | 85 | 105 |
| 1942 | 118 | 123 | 130 | 124 | 127 | 117 | 162 | 164 | 171 | 166 | 195 | 130 | 94 | 122 |
| 1943 | 109 | 119 | 130 | 138 | 120 | 121 | 121 | 159 | 136 | 127 | 125 | 113 | 104 | 114 |
| 1944 | 119 | 125 | 128 | 141 | 125 | 114 | 149 | 161 | 160 | 179 | 227 | 127 | 96 | 120 |
| 1945 | 118 | 125 | 135 | 142 | 143 | 130 | 154 | 174 | 179 | 217 | 139 | 81 | 91 | 123 |
| 1946 1/ | 117 | 116 | 149 | 155 | 144 | 129 | 140 | 157 | 156 | 208 | 155 | 81 | 74 | 109 |
|  | Operating expense per dollar of gross farm income |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| 1930 | .58 | .48 | .56 | .57 | .60 | .52 | .58 | .75 | .69 | .48 | .59 | .56 | .48 | .46 |
| 1931 | .55 | .71 | .82 | .80 | .74 | .66 | .89 | 1.47 | 1.12 | .69 | .59 | .57 | .55 | .39 |
| 1932 | .69 | .65 | .85 | .70 | .71 | .70 | .89 | 1.14 | .78 | 1.02 | 1.16 | .48 | .55 | .40 |
| 1933 | .63 | .64 | .48 | .70 | .59 | .63 | .72 | .59 | .69 | .59 | .65 | .37 | .39 | .30 |
| 1934 | .61 | .63 | .49 | 1.06 | .97 | .59 | 1.18 | 1.11 | 1.22 | .67 | .56 | .66 | .33 | .20 |
| 1935 | .49 | .40 | .33 | .39 | .35 | .31 | .39 | .45 | .43 | .51 | .53 | .33 | .32 | .21 |
| 1936 | .55 | .48 | .34 | .60 | .60 | .42 | .82 | 1.14 | 1.74 | .43 | .45 | .43 | .32 | .19 |
| 1937 | .61 | .44 | .34 | .42 | .38 | .41 | .47 | .40 | .65 | .62 | .44 | .38 | .40 | .27 |
| 1938 | .53 | .49 | .40 | .44 | .41 | .46 | .48 | .58 | .57 | .52 | .53 | .37 | .40 | .24 |
| 1939 | .60 | .54 | .35 | .48 | .43 | .48 | .38 | .47 | .45 | .64 | .43 | .38 | .34 | .22 |
| 1940 | .55 | .46 | .34 | .39 | .35 | .45 | .41 | .45 | .42 | .50 | .44 | .37 | .36 | .21 |
| 1941 | .52 | .38 | .25 | .30 | .28 | .35 | .26 | .28 | .27 | .23 | .25 | .27 | .30 | .15 |
| 1942 | .48 | .33 | .21 | .23 | .23 | .31 | .21 | .25 | .24 | .19 | .18 | .30 | .33 | .16 |
| 1943 | .48 | .34 | .22 | .29 | .28 | .35 | .28 | .24 | .29 | .23 | .22 | .32 | .32 | .16 |
| 1944 | .46 | .33 | .24 | .31 | .31 | .41 | .23 | .24 | .28 | .20 | .15 | .31 | .38 | .18 |
| 1945 | .44 | .35 | .23 | .30 | .25 | .35 | .21 | .21 | .25 | .14 | .21 | .35 | .38 | .17 |
| 1946 1/ | .43 | .30 | .17 | .21 | .19 | .28 | .17 | .18 | .19 | .12 | .17 | .31 | .32 | .15 |

1/ Preliminary.

Table 6.- Total costs per unit of production and operator's net farm income, family-operated farms, by type, 1930-46
(Index numbers 1930-44 = 100)

| Calendar year | Dairy farms | | Corn Belt farms | | | | Spring wheat farms (Northern Plains) | | | Winter wheat farms (Southern Plains) | | Cotton farms | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Central New York | Southern Wisconsin | Cash grain | Hog-beef fattening | Hog-beef raising | Hog-dairy | Wheat-corn-livestock | Wheat-small grain-livestock | Wheat-roughage-livestock | Wheat | Wheat-grain sorghum | Southern Plains | Black Prairie | Delta of Mississippi |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| | Total costs per unit of production | | | | | | | | | | | | | |
| 1930 | 127 | 121 | 145 | 133 | 127 | 119 | 100 | 89 | 89 | 77 | 89 | 128 | 112 | 133 |
| 1931 | 95 | 118 | 94 | 104 | 89 | 90 | 90 | 123 | 91 | 54 | 47 | 70 | 65 | 69 |
| 1932 | 86 | 83 | 58 | 66 | 60 | 63 | 64 | 54 | 46 | 67 | 77 | 50 | 61 | 68 |
| 1933 | 82 | 82 | 77 | 71 | 63 | 67 | 92 | 79 | 96 | 69 | 119 | 67 | 74 | 78 |
| 1934 | 82 | 95 | 108 | 117 | 115 | 89 | 127 | 154 | 111 | 132 | 111 | 148 | 103 | 91 |
| 1935 | 81 | 82 | 84 | 92 | 83 | 84 | 80 | 69 | 76 | 167 | 158 | 85 | 90 | 88 |
| 1936 | 94 | 100 | 113 | 74 | 130 | 102 | 165 | 200 | 251 | 108 | 145 | 106 | 94 | 90 |
| 1937 | 96 | 95 | 86 | 96 | 89 | 98 | 101 | 83 | 100 | 144 | 115 | 72 | 80 | 77 |
| 1938 | 84 | 91 | 78 | 93 | 88 | 90 | 82 | 74 | 96 | 89 | 96 | 84 | 79 | 87 |
| 1939 | 92 | 95 | 84 | 101 | 92 | 89 | 74 | 90 | 81 | 153 | 107 | 95 | 79 | 87 |
| 1940 | 88 | 82 | 91 | 92 | 84 | 90 | 83 | 77 | 76 | 101 | 89 | 90 | 80 | 96 |
| 1941 | 101 | 100 | 99 | 100 | 97 | 105 | 81 | 71 | 71 | 61 | 68 | 94 | 120 | 116 |
| 1942 | 109 | 101 | 110 | 107 | 104 | 114 | 88 | 89 | 75 | 74 | 70 | 107 | 127 | 126 |
| 1943 | 135 | 123 | 132 | 124 | 136 | 139 | 141 | 119 | 121 | 111 | 118 | 143 | 155 | 153 |
| 1944 | 148 | 132 | 141 | 130 | 143 | 161 | 132 | 129 | 120 | 93 | 91 | 161 | 181 | 141 |
| 1945 | 148 | 141 | 143 | 138 | 139 | 156 | 141 | 128 | 116 | 91 | 125 | 187 | 205 | 144 |
| 1946 1/ | 165 | 161 | 155 | 142 | 150 | 170 | 160 | 146 | 134 | 104 | 129 | 209 | 267 | 181 |
| | Operator's net farm income 2/ | | | | | | | | | | | | | |
| 1930 | 90 | 83 | 29 | 36 | 34 | 66 | 49 | 20 | 35 | 64 | 28 | 32 | 61 | 34 |
| 1931 | 77 | 20 | - 7 | - 4 | 9 | 27 | 1 | - 21 | - 15 | 17 | 25 | 31 | 44 | 39 |
| 1932 | 35 | 22 | - 5 | 7 | 11 | 18 | - 1 | - 13 | 13 | - 15 | - 17 | 40 | 34 | 26 |
| 1933 | 44 | 25 | 41 | 6 | 25 | 23 | 12 | 35 | 20 | 26 | 14 | 67 | 66 | 44 |
| 1934 | 57 | 30 | 37 | 20 | - 6 | 33 | - 15 | - 6 | - 14 | 12 | 24 | 8 | 75 | 70 |
| 1935 | 86 | 93 | 75 | 127 | 116 | 120 | 72 | 71 | 74 | 40 | 32 | 83 | 91 | 71 |
| 1936 | 75 | 70 | 88 | 30 | 30 | 80 | 6 | - 2 | - 24 | 62 | 43 | 49 | 104 | 112 |
| 1937 | 78 | 96 | 77 | 99 | 93 | 97 | 58 | 86 | 45 | 25 | 52 | 103 | 95 | 98 |
| 1938 | 83 | 74 | 66 | 77 | 84 | 82 | 62 | 44 | 48 | 42 | 37 | 79 | 76 | 79 |
| 1939 | 68 | 59 | 84 | 61 | 74 | 69 | 92 | 67 | 74 | 22 | 57 | 75 | 101 | 89 |
| 1940 | 92 | 88 | 90 | 88 | 105 | 84 | 80 | 74 | 90 | 48 | 56 | 90 | 101 | 81 |
| 1941 | 119 | 138 | 173 | 171 | 180 | 155 | 205 | 196 | 207 | 213 | 165 | 192 | 135 | 156 |
| 1942 | 172 | 208 | 252 | 292 | 278 | 228 | 314 | 270 | 315 | 319 | 297 | 220 | 158 | 198 |
| 1943 | 187 | 235 | 269 | 252 | 243 | 229 | 247 | 336 | 278 | 265 | 249 | 196 | 196 | 199 |
| 1944 | 237 | 259 | 231 | 238 | 224 | 189 | 318 | 343 | 354 | 360 | 438 | 235 | 163 | 204 |
| 1945 | 255 | 274 | 273 | 286 | 334 | 276 | 393 | 421 | 456 | 554 | 293 | 150 | 179 | 223 |
| 1946 1/ | 286 | 351 | 419 | 494 | 501 | 389 | 526 | 565 | 609 | 722 | 429 | 206 | 240 | 255 |

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1/ Preliminary.
2/ Net farm income minus rent and interest paid by the farm operator. This is what the farm operator and his family get for the use of their labor, capital, and land after paying current production expenses, rent and interest on the mortgage debt and taking account of inventory changes.

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Some farmers have been able, through various means to hold per unit costs in check despite substantial increases in cost rates. The index of total cost per unit of production in 1944-46 on central New York and southern Wisconsin dairy farms averaged about 150 percent compared with about 105 percent on Southern Plains wheat and wheat-grain sorghum farms; both indexes based on 1930-44 = 100. The index of prices paid for goods and services used in production averaged about 150 in 1944-46 on these dairy farms and 120 on Southern Plains wheat farms. However, it should be pointed out that feed costs and wage rates rose relatively higher than did the cost rates of most other items used in farm production. Therefore, any measures then as now, which tended to reduce the amount of hired labor and purchased feed lowered per unit costs to that extent. Hired labor and purchased feed are still two of the high cost elements in production costs and the individual farmer can hold unit costs in check by substituting good quality hay, pasture, and other forages to a maximum for purchased concentrates and by resorting to the extensive use of labor-saving devices.

Another way of measuring the relative positions of these farm operators in reducing costs and in increasing net returns is to ascertain the amount of each dollar of gross farm income that is required to meet operating expenses. The results from this calculation for the 17-year period on all farms are given in table 5. In the 5-year period 1942-46 about 18 cents out of each dollar of gross farm income on Southern Plains wheat farms went to pay operating expenses compared with 46 cents on central New York dairy farms and 35 cents on southern Wisconsin dairy farms.

The index of operator's net farm income (see footnote, table 5) in 1942-46 for Southern Plains wheat farmers averaged about 390, for Corn Belt farmers 295, and for southern Wisconsin and Central New York dairy farmers 245, all based on 1930-44 = 100. There is much less variation in most production and income items on dairy farms than on most other farms, particularly crop farms where annual precipitation is light and varied and the effects of highly variable rainfall and crop yields are particularly noticeable on the wheat farms.

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# THE Farm Cost SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

FCS-4 BAE MARCH 1948

Approved by Outlook and Situation Board, March 30, 1948

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## GENERAL SITUATION

Farm production costs have reached a new high during the past winter. They probably will continue high through 1948. However, prices farmers receive for their products reached a record high level in January but have declined since. Prices of a few farm products are about at prewar levels. Most farmers are likely to have a profitable year, but some will be pinched by high costs.

The index of prices of all commodities except labor used in farm production has nearly doubled since 1939. In 1947 it averaged 184 percent of 1935-39, compared with 151 in 1946 and 137 in 1945. During the last 4 months of 1947 this index averaged 196 compared with 160 for the same period in 1946. The average for the first quarter of 1948 was 202 compared with 169

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## Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | All commodities 1/ | Farm machinery | Building material other than house | Equipment and supplies 2/ | Feed | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|
| 1910 | 77 | 66 | 68 | 91 | 86 | 99 | - | 82 |
| 1911 | 81 | 66 | 70 | 90 | 99 | 99 | - | 83 |
| 1912 | 77 | 66 | 70 | 90 | 84 | 100 | 66 | 86 |
| 1913 | 80 | 66 | 68 | 90 | 99 | 102 | 63 | 88 |
| 1914 | 78 | 66 | 63 | 89 | 94 | 100 | 64 | 86 |
| 1915 | 82 | 68 | 69 | 95 | 93 | 112 | 77 | 87 |
| 1916 | 98 | 70 | 79 | 116 | 120 | 120 | 92 | 96 |
| 1917 | 119 | 80 | 93 | 141 | 170 | 137 | 96 | 119 |
| 1918 | 137 | 102 | 109 | 163 | 179 | 170 | 123 | 150 |
| 1919 | 151 | 105 | 128 | 162 | 195 | 182 | 181 | 175 |
| 1920 | 137 | 109 | 139 | 170 | 127 | 186 | 98 | 205 |
| 1921 | 111 | 105 | 105 | 137 | 90 | 156 | 86 | 131 |
| 1922 | 109 | 93 | 107 | 126 | 114 | 129 | 84 | 129 |
| 1923 | 111 | 97 | 109 | 123 | 124 | 126 | 92 | 144 |
| 1924 | 112 | 101 | 109 | 120 | 131 | 120 | 97 | 147 |
| 1925 | 116 | 101 | 111 | 126 | 131 | 129 | 111 | 149 |
| 1926 | 115 | 101 | 109 | 130 | 127 | 126 | 138 | 152 |
| 1927 | 113 | 101 | 108 | 127 | 128 | 121 | 127 | 152 |
| 1928 | 117 | 101 | 107 | 124 | 137 | 131 | 115 | 152 |
| 1929 | 116 | 100 | 107 | 123 | 134 | 130 | 119 | 153 |
| 1930 | 111 | 100 | 105 | 118 | 122 | 126 | 112 | 142 |
| 1931 | 97 | 99 | 94 | 104 | 86 | 115 | 98 | 110 |
| 1932 | 86 | 93 | 85 | 96 | 64 | 99 | 66 | 81 |
| 1933 | 85 | 91 | 87 | 93 | 71 | 96 | 61 | 72 |
| 1934 | 97 | 95 | 99 | 98 | 98 | 104 | 90 | 81 |
| 1935 | 100 | 96 | 97 | 97 | 105 | 102 | 99 | 88 |
| 1936 | 98 | 98 | 98 | 99 | 104 | 96 | 91 | 94 |
| 1937 | 107 | 101 | 105 | 102 | 121 | 102 | 124 | 107 |
| 1938 | 99 | 104 | 100 | 103 | 85 | 100 | 102 | 106 |
| 1939 | 96 | 101 | 100 | 99 | 85 | 100 | 84 | 105 |
| 1940 | 98 | 100 | 101 | 99 | 94 | 97 | 84 | 107 |
| 1941 | 103 | 103 | 109 | 104 | 101 | 100 | 80 | 131 |
| 1942 | 117 | 108 | 120 | 114 | 125 | 111 | 123 | 171 |
| 1943 | 128 | 111 | 128 | 121 | 150 | 120 | 156 | 224 |
| 1944 | 136 | 114 | 138 | 126 | 165 | 121 | 175 | 268 |
| 1945 | 137 | 116 | 141 | 128 | 163 | 121 | 181 | 297 |
| 1946 | 151 | 120 | 158 | 132 | 194 | 124 | 190 | 321 |
| Jan. | 138 |  |  |  | 165 |  |  | 307 |
| Feb. | 139 |  |  |  | 167 |  | 186 |  |
| Mar. | 139 | 116 | 144 | 128 | 168 |  | 191 |  |
| Apr. | 140 |  |  |  | 169 | 122 | 191 | 307 |
| May | 146 |  |  |  | 182 |  | 192 |  |
| June | 150 | 118 | 151 | 129 | 191 |  |  |  |
| July | 159 |  |  |  | 227 |  |  | 321 |
| Aug. | 161 |  |  |  | 231 |  |  |  |
| Sept. | 157 | 121 | 156 | 133 | 214 | 127 | 189 |  |
| Oct. | 159 |  |  |  | 210 |  |  | 321 |
| Nov. | 161 |  |  |  | 210 |  |  |  |
| Dec. | 163 | 123 | 180 | 135 | 204 |  |  |  |
| 1947 | 184 | 137 | 222 | 150 | 235 | 138 | 230 | 346 |
| Jan. | 163 |  |  |  | 196 |  |  | 339 |
| Feb. | 169 |  |  |  | 192 |  | 229 |  |
| Mar. | 176 | 128 | 218 | 138 | 212 |  | 239 |  |
| Apr. | 179 |  |  |  | 219 | 136 | 240 | 337 |
| May | 178 |  |  |  | 215 |  | 239 |  |
| June | 183 | 138 | 218 | 148 | 229 |  |  |  |
| July | 184 |  |  |  | 235 |  |  | 343 |
| Aug. | 188 |  |  |  | 247 |  |  |  |
| Sept. | 193 | 141 | 220 | 155 | 264 | 140 | 228 |  |
| Oct. | 194 |  |  |  | 264 |  | 208 | 343 |
| Nov. | 195 |  |  |  | 265 |  |  |  |
| Dec. | 200 | 142 | 230 | 159 | 277 |  |  |  |
| 1948 |  |  |  |  |  |  |  |  |
| Jan. | 204 | - | - | - | 291 | - | - | 360 |
| Feb. | 201 | - | - | - | 264 | - | 219 | - |
| Mar. | 201 |  |  |  | 265 |  | 221 |  |

1/ Excluding wages.

2/ Based on prices paid by farmers for 16 items including binder twine, lead arsenate, milk pails, pitchforks, gasoline for autos and trucks, motor oil, and tires, and other similar items used on farms for production.

Note:- For a list of items included in this table see "Agricultural Prices" Bureau of Agricultural Economics, April 29, 1946.

for the first quarter of 1947. Farm wage rates have risen similarly during this period. They are now more than three times their prewar, 1935-39 level.

Since 1935-39, farmers' total out-of-pocket operating expenses have risen from 9 to 25 percent each year. They mounted from an average of 5.2 billion in 1935-39 to nearly 12.8 billion in 1946 and 15.3 billion in 1947. They are expected to increase further in 1948. On the other hand, the index of farm product prices in 1947 averaged 159 percent above the 1935-39 average. This was the highest on record and nearly 20 percent above the previous high of 1946. Prospects are for continued high prices for many products in 1948. Gross farm income in 1947 was 34.6 billions compared with 10.4 billions in 1935-39. Gross total farm production was 22 percent higher in 1947 than in the prewar period 1935-39.

There may be some improvement this year over last in both the farm labor supply and the general skill and experience of the workers. But farm wage rates will continue high, probably near last year's record. The prospective increase in the supply of farm machinery will alleviate the general farm labor situation, particularly for those farmers who are in a position to substitute machinery for labor.

New farm machinery plants are coming into production and old plants are producing at record levels. Farm machinery output in 1948 probably will exceed the record output of last year. Except in 1943, farm machinery production has been high for over a decade. Each year since 1943 machinery production has exceeded that of the previous year. Production of wheel tractors in 1947 was 420,000 compared with 255,000 in 1946, and the previous high record of 313,000 in 1941. The number of tractors on farms January 1, 1948, was more than double prewar. Exports of farm machinery probably will be somewhat higher in 1948 than in 1947, but farm machinery production in

1948 is expected to be enough higher to take care of these exports and provide United States farmers with more new machinery than in 1947.

Feed costs are high and probably will remain high for several months, although feed prices dropped considerably in late January and February 1948. But high feed costs alone do not mean necessarily that a livestock enterprise is unprofitable. Prices of livestock and livestock products also are important in determining the profitableness of livestock feeding. These prices are comparatively high and probably will remain high in 1948. Under present price relationships it will pay livestock farmers in 1948 to substitute high protein feeds for feed grains whenever possible, and it is likely that this situation will continue until the new crop of feed grains becomes available. The supply of feed grains on hand January 1 was about 25 percent lower than a year earlier, but total livestock production between now and next fall is expected to be only about ten percent below a year ago.

As usual, the average cost of seeds this year does not tell the whole story of what farmers will have to pay for specific kinds and varieties of seeds. Prices will vary widely by areas. Higher prices are reported for red clover, Ladino clover, Korean lespedeza, crested wheat grass, corn, rapeseed and a few seed grains. Lower prices are being asked for alfalfa, timothy, Kentucky bluegrass, orchard grass, white clover, brome and ryegrass (see table 3).

Fertilizer prices are higher now than a year ago and are expected to remain higher than in 1947, when they averaged about 12 percent above 1946. Nitrogen, phosphoric acid and potash supplies have been increasing and are expected to be about 5 percent greater than in 1947. However, supplies of nitrogen and potash probably will be short compared with current demands.

Supplies of farm building materials, containers, insecticides and fungicides and some other materials have been improving and most items will be easier to get in 1948 than they were in 1947. Although production of most items, particularly lumberand building materials has been high, current demand has absorbed much of the supplies. Stocks of lumber are low compared with prewar partly because of the reluctance of dealers to build up inventories at current high prices. Supplies of most insecticides and fungicides will be sufficient to meet the demands, and farmers may expect to obtain them at lower prices.

Farm land rentals and land values have continued to increase. Land rentals are over 3 times the prewar level and higher than for any previous year. Land values are practically at the 1920 peak reached in the boom that followed World War I. A large number of recent farm buyers have made full cash transactions, but many have assumed mortgages. Those farmers who have large mortgages need to recognize that they have contracted for a heavy fixed cost for interest and principal payments. In addition, farm real estate taxes also are increasing.

Farmers should recognize that cost rates are characteristically inflexible and that any decline in farm commodity prices and farm incomes will make it difficult for many farmers to meet payments on their debts.

## Farm Labor

The farm labor situation this year is not expected to be greatly different from that of 1947. There may be a small increase in farm labor supply and in total farm employment. Nonfarm employment is at a peacetime high, and there will be continued active competition for workers. Farm wage rates probably will average about the same as last year.

The prospective increase in supply of farm machinery again will help farmers to attain comparatively high production. But farmers who depend chiefly on hired workers this year will still find it necessary to plan carefully for their labor supplies.

Table 1.- Farm wage rates and related data, United States,
1935-39 average and 1940-47 inclusive
(Index numbers 1935-39 = 100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates | Ratio farm wage rates to | |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ | | Production per worker | Gross farm income per worker |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 108 | 111 | 107 | 96 | 98 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 131 | 112 | 94 |
| 1942 | 95 | 94 | 99 | 123 | 129 | 171 | 133 | 91 |
| 1943 | 94 | 94 | 94 | 120 | 128 | 224 | 175 | 95 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 268 | 199 | 106 |
| 1945 | 90 | 92 | 82 | 123 | 137 | 297 | 217 | 110 |
| 1946 | 92 | 94 | 84 | 126 | 137 | 321 | 234 | 106 |
| 1947 4/ | 93 | 95 | 87 | 122 | 131 | 346 | 264 | 97 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Preliminary.

## Farm Power and Machinery

New farm machinery plants are coming into production and old plants are producing at record levels. If labor management-difficulties or other unfavorable developments do not occur, total production of farm machinery in 1948 will exceed the record high output of 1947. The most pronounced increase in production in 1948 is expected for small wheel tractors and their complementary equipment. On the other hand, production of dairy and poultry equipment, feed cutters and most kinds of horse drawn equipment may even decline. But these items were in relatively good supply in most retail outlets in 1947, and are likely to be adequate in 1948.

Full details concerning 1947 production are not yet available but the total output of farm machines probably was about one-third above the previous record output of 1946 and about double the 1935-39 average. Production of wheel tractors in 1947 was 420,000 compared with 255,000 in 1946 and the previous high of about 313,000 in 1941.

Exports of farm machinery in 1947 were also at a record high level. The volume of new machinery exported in 1947 accounted for around 18 percent of the total output of farm machinery including industrial tractors, and was about two-thirds greater than in 1946. Exports of new tractors in 1947 included about 80,000 wheel tractors, 15,000 garden tractors and 12,000 crawlers. About three-fourths of the crawler exports were for nonfarm use. Total production of tractors in 1947 was 624,000. This included 420,000 wheel, 166,000 garden, and 38,000 crawler type tractors.

European countries in 1948 may take a considerably larger proportion of our exports of farm machinery than in 1947 when they took about 20 percent. Exports to non-European countries in 1948 may show little change and even decrease somewhat from the high level of 1947, because dollar shortages in some countries are expected to influence adversely their purchases of farm machinery.

Export demand in 1948 is expected to be especially strong for crawler tractors and for large wheel tractors of the diesel type or those adapted for use with heavy motor fuels. Supplies of these tractors likely will continue relatively tight for sometime.

Despite high exports, United States farmers in 1947 obtained more farm machines than in any previous year. Production of new machinery in 1948 should increase sufficiently over 1947, to permit a moderate increase in exports and still leave more machinery for domestic use than ever before.

Wholesale prices for farm machinery in 1947 were about 13 percent higher than in 1946 and about 30 percent above the 1935-39 average. However, retail prices in 1947 for many machines were often substantially more than 30 percent above the prewar price since current models have more accessories than did the prewar models.

Farm incomes, feed prices, and farm wage rates in 1947 were 200 percent or more over the 1935-39 levels. Thus in 1947, as in most recent years, there was a tremendous demand for power machines, and for all kinds of labor saving machinery. The high prices received for crops have increased the demand for machinery because farmers, by using more machines, can shorten the time required for planting and harvesting and lessen the risk of crop loss.

Farmers in some areas are reported to be buying much of their machinery particularly tractors and tractor equipment from sources that charge prices substantially above either the manufacturer's list prices or those charged by authorized farm machinery distributors. Thus prices paid by farmers for such items may be somewhat higher than are generally reported. The "gray markets" are believed to be most important in the North Central States where the especially favorable grain and livestock prices have bolstered farm incomes greatly.

For more than a decade farm machinery production has been at a high level except in 1943. The number of tractors on farms in 1948 will be more than double prewar. Horse and mule numbers on January 1, 1948, were the lowest in more than a century. Numbers of workstock in 1948 (animals 3 years old and over) were about 39 percent below prewar. Reduction in horse and mule numbers has been especially marked since 1945. In these three years beginning with January 1, 1945, almost 2.8 million head of horses and mules disappeared from farms. Exports of horses and mules were large in both years but much of the loss in numbers apparently resulted from slaughter. Prices for horses and mules in most areas have been below prewar prices, and slaughterers often have paid higher prices for animals than were offered by other purchasers. Many animals suitable for further farm work have been sold for slaughter.

The colt crop of 1947 numbered only 226,000 head. This was only about one-third as large as the average annual prewar crop, and only one-tenth as large as during the World War I period.

Low prices for work animals along with the high feed prices are making colt raising unprofitable, and many farmers who formerly produced work animals for sale now use their feed and other resources for producing meat animals or animal products. The decline in colt production likely will continue until prices of work animals increase relative to prices of other farm products. The 1948 colt crop is expected to be even smaller than the 1947 crop.

Along with the tremendous decline in horse and mule numbers, farmers have purchased large numbers of tractors and tractor machines and motor vehicles, especially motor trucks. Reflecting the large machinery purchases, the total volume of machinery and power on farms January 1, 1947 was about 40 percent above prewar (see table 2). With farm machinery output in 1947 at a record high level and with farmers buying substantial numbers of automobiles and motor vehicles, the total volume of machinery and power on farms January 1, 1948 was around 50 percent above prewar.

With high production of farm machinery, automobiles and motor trucks, the increase in volume of machinery and power on farms from January 1, 1948 to January 1, 1949 may be larger than for any previous year.

## Feed

Feed costs are still high and probably will remain so for several months. The supply of feed grains on January 1 was about 25 percent lower than a year earlier while total production of livestock and livestock products between now and next fall is expected to be only about 10 percent below a year ago. In the Northeastern States where more than half of the feed concentrates used is shipped in, the number of grain-consuming livestock and poultry to be fed is only about 3 percent less than in the year before. However, marketings of corn from surplus areas probably will be 40 percent less than a year earlier. The demand from deficit areas appears to be strong enough to hold prices up or push them up still higher until the 1948 feed crops are available.

If this year's feed grain crop is average or larger, supplies next fall in relation to livestock will be much more plentiful than now. With an average feed grain crop in 1948, the total supply of feed concentrates this fall will be about 10 percent above the average for 1937-41 when stocks were high. Furthermore, the number of grain-consuming livestock is down to prewar level and cannot be increased materially before another year.

In March 1948, the index of prices of feed grains and hay was 299 (1935-39 = 100) and the index of livestock and livestock product prices was 258. On March 15 all livestock prices were still low compared with feed prices. The hog-corn ratio in March 1948 was 10.3 compared with the long-time average for March of 12.8; milk-feed 1.15 compared with 1.26. Particularly low was poultry. Farmers' intentions to reduce chickens and turkeys raised by one-fifth in 1948 reflect these low ratios.

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-48
(Index numbers 1935-39 = 100)

| Year or period | Number on farms, January 1 | | | | | | Volume on farms January 1 1/ | | Gross farm income calendar year 2/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules, all ages | Work stock 3-years old and over | Colts under 1-year of age | Tractors | Auto-mobiles | Motor trucks | All machinery and equipment other than tractors and motor vehicles | All farm power, (including work animals) machines and equipment | | |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 119 | 107 | 106 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 125 | 110 | 133 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 137 | 117 | 178 | 148 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 152 | 121 | 221 | 179 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 158 | 122 | 232 | 182 |
| 1945 | 76 | 77 | 54 | 195 | 107 | 153 | 176 | 128 | 244 | 188 |
| 1946 | 70 | 72 | 41 | 208 | 107 | 159 | 200 | 134 | 278 | 217 |
| 1947 3/ | 64 | 66 | 35 | 225 | 113 | 178 | 219 | 141 | 332 | 259 |
| 1948 3/ | 58 | 61 | 30 | | | | | | | |

1/ In terms of 1935-39 prices.
2/ Includes government payments.
3/ Preliminary.

Unless feed grain crops in 1948 are poor, feed is likely to be cheaper next fall in relation to livestock and livestock products than it is now.

It will pay to conserve feed this spring and summer, not only on farms where it is purchased but also on farms where it is sold. It will reduce costs in the first case and allow more grain for sale in the other. One of the principal means of saving grain feed in the summer is by the maximum use of pasture, not only for cattle and sheep but for hogs and poultry as well. Improvement of permanent pastures by fertilizing and liming, and by providing supplementary pastures for use during July and August when the permanent pastures often dry up, are helpful in maintaining production with a minmum use of high priced grain.

Many farmers will keep their grain costs low this summer by having a field of clover or alfalfa for livestock to range over. If these crops are not available, a field of rape or other temporary grazing crop should be provided. Sudan grass, millet, soybeans, and cowpeas are good crops for summer pasture. Annual lespedeza seeded with small grain will be ready for grazing after the grain is cut.

Another way of saving grain is by using enough high protein feeds to balance the ration. Farmers generally do not use enough protein feeds. This is particularly true in the West North Central States. Protein feeds are more abundant this year than in many years and are a little cheaper than usual compared with feed grains. In most of the country oil meals are selling for only about 1½ times the price of corn. A pound of oil meal will save more than 1½ pounds of corn in rations deficient in protein.

Feed costs next winter can be reduced if farmers will cut their hay at the proper stage of maturity this summer and cure and store it to preserve the quality. A large part of the feed value of hay is lost by allowing hay to stand too long, and by following systems of handling that fail to preserve the maximum feed value.

## Seeds

Present estimates are that the average cost of field seeds will be about the same this year as last but about twice as high as prewar. Although retail prices of 15 of 24 kinds of field seeds in mid-March were higher than a year ago, the full effect of recent lower wholesale prices for many kinds of seeds may not have been fully reflected in retail prices (see table 3). Prices received by growers on November 15, 1947 for the 1947 crop of 14 important kinds of field seeds averaged 7 percent lower than in 1946 but 93 percent higher than in 1935-39.

As usual, the average cost of seeds this year will not be a good index of what farmers will have to pay for specific kinds and varieties. The supply, while good in general, varies a great deal by individual items. Sharp increases in retail prices are reported for red clover, ladino clover, Korean lespedeza, crested wheatgrass, rapeseed, seed corn, and seed grains. On the other hand, lower prices are being asked for alfalfa, timothy, orchard grass, Kentucky-bluegrass, white clover, alsike clover, brome and ryegrass. For the first time since 1937, red clover seed costs more than Grimm alfalfa.

Table 3.- Retail Seed Prices, March 15, United States
Index numbers (1942-46 = 100)

| Item | 1946 | 1947 | 1948 |
|---|---|---|---|
| Clover, Red | 118 | 153 | 177 |
| Clover, Alsike | 117 | 150 | 148 |
| Clover, White | 131 | 112 | 86 |
| Clover, Ladino 1/ | 114 | 107 | 134 |
| Clover, Sweet | 112 | 115 | 125 |
| Lespedeza (Korean) | 101 | 88 | 143 |
| Alfalfa, Common | 107 | 115 | 92 |
| Alfalfa, Grimm | 107 | 120 | 106 |
| Timothy | 100 | 114 | 100 |
| Redtop | 111 | 140 | 148 |
| Kentucky, Bluegrass | 160 | 325 | 133 |
| Common Ryegrass | 114 | 118 | 114 |
| Orchard Grass | 103 | 74 | 60 |
| German Millet | 131 | 143 | 162 |
| Smooth Brome | 102 | 156 | 119 |
| Crested Wheat Grass | 95 | 165 | 220 |
| Amber Sorgo | 145 | 175 | 193 |
| Sudan Grass | 114 | 133 | 142 |
| Rapeseed | 114 | 98 | 117 |
| Seed Corn (hybrid) | 108 | 116 | 137 |
| Seed Corn (open poll.) | 122 | 126 | 151 |
| Spring Wheat | 116 | 158 | 178 |
| Oats | 114 | 138 | 217 |
| Barley | 122 | 147 | 209 |

1/ Base period is 1943-46.

## Fertilizer

Farmers paid approximately 12 percent more per ton for fertilizer in 1947 than in 1946. Fertilizer prices this year are expected to be higher than in 1947. Prices received by farmers for all crops and livestock were about 20 percent higher in 1947 than in 1946, so that there was a continued rise in the purchasing power of all farm products for fertilizer.

Transportation is important in the cost of fertilizer to the farmer. Freight rates are also higher now than a year ago. Wholesale prices of fertilizer materials are approximately 8 percent above those of a year ago. This means further increases in the cost of fertilizer to farmers during 1948.

The effect of the increase in freight rates is only partly reflected in the change in wholesale prices of materials. Some of these price changes are measured at the point of origin of the material so that the cost of transportation to the manufacturing plant must be added. Then there is also the freight cost from the manufacturer to the retail distributor.

Costs of transporting fertilizer tend to pyramid because the same materials are frequently moved three times or more in going from the raw material stage to the farmer. In 1944, carload shipments of fertilizer on class 1 railroads alone were double the amount consumed in that year. The ratio is about three to one if all kinds of transportation are included.

Supplies of fertilizer for this crop season will be about double the average annual quantity used before the war. Supplies of nitrogen, phosphoric acid and potash will be up about 4, 6, and 5 percent, respectively, over those of last year. Even with these increases, supplies of nitrogen and potash, particularly, will be short compared with what would be purchased at current price relationships. Crop price-fertilizer cost relationships are frequently regarded as the measure to use in determining profitable quantities of fertilizer to apply. However, the benefits of fertilizer carry through into livestock enterprises in the form of lower cost feed and increased gains through improvement in the feeding quality of the crops. This fact is becoming of increasing importance as more fertilizer is used to increase yields, quality, and carrying capacity of hay and pasture. Therefore, livestock and livestock product prices are also important in the purchase of fertilizer.

The relationship between prices received by farmers and fertilizer prices determines the rate and extent to which fertilizer application is profitable. Fertilizer consumption has rarely been as great as would have been most profitable except for certain crops on which some farmers have long followed the practice of heavy applications.

## Lumber, Containers, and Supplies

The supply of farm building materials has been improving and some items will be easier to get in 1948 than in 1947. The supply of 2x4's, 2x6's and rough boards will be more plentiful than in 1947. However, total production of lumber in 1948 probably will be about the same as in 1947, when 38 billion board feet were produced. This is the highest production of any year since 1929. Stocks of lumber are still increasing in retail yards, mills, and concentration yards. On January 1, 1948, they totaled 9.8 billion board feet compared with 8.1 billions on January 1, 1947, and 14.4 billions on January 1, 1941. By February 1, 1948, these stocks had increased to 10.3 billion board feet. Low stocks compared with prewar are due in part to dealers reluctance to build up inventories of high-priced materials.

Production in 1947 of barbed and woven wire, fencing, nails and staples, bale ties, wire netting, pipe and galvanized roofing and siding was 10 to 20 percent higher than in 1946, and production in 1948 is expected to be still higher. The general demand for merchant trade products has been high. Pipe has been in tight supply because of the continued demand for use in the housing program and other construction and industrial uses. Although production of galvanized roofing and siding, nails and bale ties is at an exceptional high rate; demands continue to exceed production and some areas have experienced shortages.

Imports of burlap for bagging and other agricultural purposes are expected to be higher in the first six months of 1948 than in the same period in 1947. Paper, open mesh and cotton bags should be in good supply and sufficient to meet current demands. Supplies of tin cans and wooden containers also are expected to be equal to or slightly larger than in 1947.

## Insecticides and Fungicides

Prices for several kinds of insecticides, as well as for some of the chemicals used in insecticides have decreased some during the last few months. This is particularly true of DDT and insecticides containing this chemical. It appears that prices are now fairly well stabilized. It is not anticipated that there will be any other significant reductions in prices of insecticides in the near future or for materials needed for use during the coming season.

The supply of nicotine compounds will continue to be below the demand and need. The supply of nicotine insecticides, however, is somewhat more favorable than it was for the 1947 season. This is due in part to a slight improvement in production and in part to the use of other materials for some insects formerly controlled by the use of nicotine compounds.

Pyrethrum will be available in adequate quantities to meet the needs for 1948. Rotenone insecticides are now in plentiful supply. However, the rotenone insecticides for use during the current crop season will have to come for the most part from inventories already in this country since further imports would arrive too late for use during the period of greatest need. This may result in shortages during the latter part of the season.

The supply of arsenicals, particularly lead arsenate and calcium arsenate, probably will be sufficient to meet the needs in 1948. The newer insecticides such as DDT, chlordane, benzene hexachloride, chlorinated camphene, should be available in amounts fully adequate to meet estimated requirements for 1948. Supplies of insecticides which contain fluorine, such as cryolite, sodium fluoride and sodium fluosilicate, also will be ample for 1948. Napthalene, paradichloro-benzene and others should be reasonably in balance with the needs for 1948. Sulphur, dust diluents, and oils used as insecticides or as carriers also should be available in adequate quantities. Newer soil fumigants and fungicides are expected to be generally available.

Raw materials for the manufacture of practically all insecticides and fungicides are available in quantities to meet the needs for the 1948 season. The insecticide and fungicide industry has the capacity and facilities for producing, marketing, and distributing most of the materials that will be required. Purchases indicate that there has been unusual delay on the part of those who use insecticides in deciding the amount and type of material they will use. This has been due in part to uncertainty about some of the newer materials. This delay has complicated the field supply situation considerably. The supply of many of the more important insecticides and fungicides now available at appropriate distribution centers and in the hands of the users is well below the normal use pattern.

The slowness in procuring and stocking supplies may have a serious effect on the availability of materials in the field at the time they are needed. Those who plan to use insecticides and fungicides should either purchase them now or make definite arrangements with their immediate suppliers to be sure that the quantities they will need will be available.

## Farm Land Rentals and Values

Farm land rentals during each of the last 2 years have been more than 3 times the prewar level and higher than for any previous year. Land values have also been steadily increasing. They are now double the prewar average and practically at the 1920 peak reached in the boom that followed World War I (table 4).

Table 4.- Farm real estate: Index numbers of estimated average value per acre by geographic divisions, 1920 and 1947, with selected comparisons 1/

| Geographic divisions | Index numbers 1912-14 = 100 | | | Increase | | | Ratio |
|---|---|---|---|---|---|---|---|
| | 1920 | 1947 | | 1915 to 1920 | 1941 to 1947 | Nov. 1946 to Nov. 1947 | Nov. 1947 to 1920 |
| | | March | Nov. | | | | |
| | | | | Percent | Percent | Percent | Percent |
| New England | 140 | 152 | 157 | 41 | 44 | 8 | 112 |
| Middle Atlantic | 136 | 144 | 147 | 36 | 59 | 7 | 108 |
| East North Central | 161 | 152 | 153 | 55 | 90 | 9 | 95 |
| West North Central | 184 | 119 | 126 | 75 | 89 | 12 | 68 |
| South Atlantic | 198 | 217 | 215 | 102 | 95 | 7 | 109 |
| East South Central | 199 | 246 | 248 | 101 | 111 | 10 | 125 |
| West South Central | 177 | 170 | 181 | 77 | 78 | 10 | 102 |
| Mountain | 151 | 149 | 158 | 54 | 97 | 9 | 105 |
| Pacific | 156 | 215 | 215 | 46 | 98 | 0 | 138 |
| United States | 170 | 159 | 164 | 65 | 91 | 8 | 96 |

1/ Farm land with improvements as of March 1, except where otherwise indicated.

For the year ended November 1, 1947, average values for the country as a whole rose 8 percent, compared with a rise of 14 percent a year earlier. Most of this increase took place during the late fall and winter of 1946-47. The National index rose only 3 percent from March 1 to November 1, 1947. A leveling off in values was apparent during this period in a number of geographic divisions. Average values decreased one percent in the South Atlantic States, were unchanged for the Pacific States, and increased only one percent in the East North Central and East South Central States. Values in the West North Central, West South Central and Mountain groups of States continued to increase rather sharply.

Despite a high proportion of all-cash sales and the large average down-payment in mortgage-financed sales, many recent farm buyers have incurred heavy debts. About one-third of the farms sold have been mortgaged for 50 percent or more of the purchase price, or approximately the full prewar market values.

Those farmers who are heavily indebted need to recognize that they have contracted for a heavy fixed cost for interest and principal repayments. In view of the characteristic inflexibility of production costs, declines in farm commodity prices and incomes would again cause many indebted farmers to have difficulty in meeting their mortgage payments and other fixed obligations.

## Interest, Taxes, and Insurance

Interest payments - Total interest payments made by farmers on their farm-mortgage debt increased about 2 percent in 1947. This is the second consecutive year that shows an increase. Prior to 1945, interest payments had declined steadily for nearly a quarter century. The total payment, however, is still low relative to 1947 farm income and to past interest payments. The higher interest payments payable by farmers on last year's mortgage indebtedness reflects both an increase in such debts and a somewhat higher average interest rate paid. Increased average interest rates reflect a relatively larger volume of new loans with higher interest rate lenders.

In addition to higher interest payments, a larger proportion of current loans outstanding probably require periodic principal repayments. While not technically a cost, the necessity for principal payments means that farmers have somewhat higher debt service obligations.

Interest payments on short-term non-real-estate loans to farmers during 1947 also increased over a year earlier. There is no indication as yet of any material change in interest rates but interest payments for 1947 probably were 15 percent more than in 1946 due to the larger volume of such loans. Considering total interest payments for 1947 on both mortgage and short-term loans, it is probable that they will be 7 or 8 percent higher than a year earlier. In view of the general situation it appears that interest payments in 1948 will be as high or higher than in 1947.

Taxes - Farm property tax levies in 1946 averaged about 12 percent higher than those of 1945. Preliminary indications are that the 1947 levies, payable largely late in 1947 and early in 1948, will show a further increase of about the same amount. This will be the fifth consecutive annual increase in this series. These increases in property taxes reflect in part the added cost of providing an expanding volume of State and local government services in a period of generally rising prices. Not all of the increase in costs, however, falls upon property. In 1947, general retail sales taxes were adopted by four additional States, and a number of States increased gasoline and excise taxes. Thus, the course of property-tax levies in the next few years also will be influenced by the extent to which other taxes are used to finance increased expenditures.

Insurance - Fire and lightning insurance on farm property increased about 10 percent in 1947, compared with about 7 percent in 1946. Higher property valuations influenced some farmers to increase the amount of insurance and caused others to take out insurance. It is probable that insurance payments in 1948 will be somewhat higher than in 1947.

The premium and assessment rates charged farmers per $100 of insurance have not increased greatly in recent years. However, total premiums paid by farmers have probably increased 12-15 percent more in 1947 than in 1946, due to increased purchase of fire and windstorm insurance, and greatly increased purchases of hail insurance on growing crops. Indications are that record-high purchases of hail coverage were made by farmers in 1947--even higher than in 1946.

## Gains in Farm Production Efficiency

United States farmers have made remarkable progress in production efficiency. This efficiency helped make possible the food production needed in winning two great wars. It has benefited many farmers, and often has meant the difference between farm profit or loss. Increasing production efficiency has enabled farmers to feed and clothe an increasing domestic population, and at times produce a surplus for hungry people in foreign countries.

A recent bulletin on farm mechanization, 1/ prepared in the Bureau of Agricultural Economics, traces the course of some of these important changes and analyzes the role that mechanization has played. Each farm worker now produces enough food and fiber to support himself and 13½ others. A century ago (1820) the average farm worker supported himself and only 3½ others. A man hour of farm labor now yields about 1½ times as much as it did at the time of World War I. Half of this increase in labor efficiency was due to advances in farm mechanization. The other half has resulted from other technological gains, chiefly increases in yields of crops and livestock.

Contrary to the opinion of many, farm workers have matched industrial workers in their productivity increases during the last decade. So many startling changes occurred during this time that it has been labeled as a period of "revolution in farming." Actually, however, farmers in recent years have cashed in on the production methods that had been developed over a long period of trial and experimentation.

Gains in farm production efficiency in the past have meant greater production per worker, per acre, per animal, per unit of power and machinery. In short, it has meant more product per unit of total production resource. A measure of the increased efficiency of use of all farm production resources is shown in figure 1. A unit of farm output is now produced with a fourth less inputs of all kinds than a generation ago.

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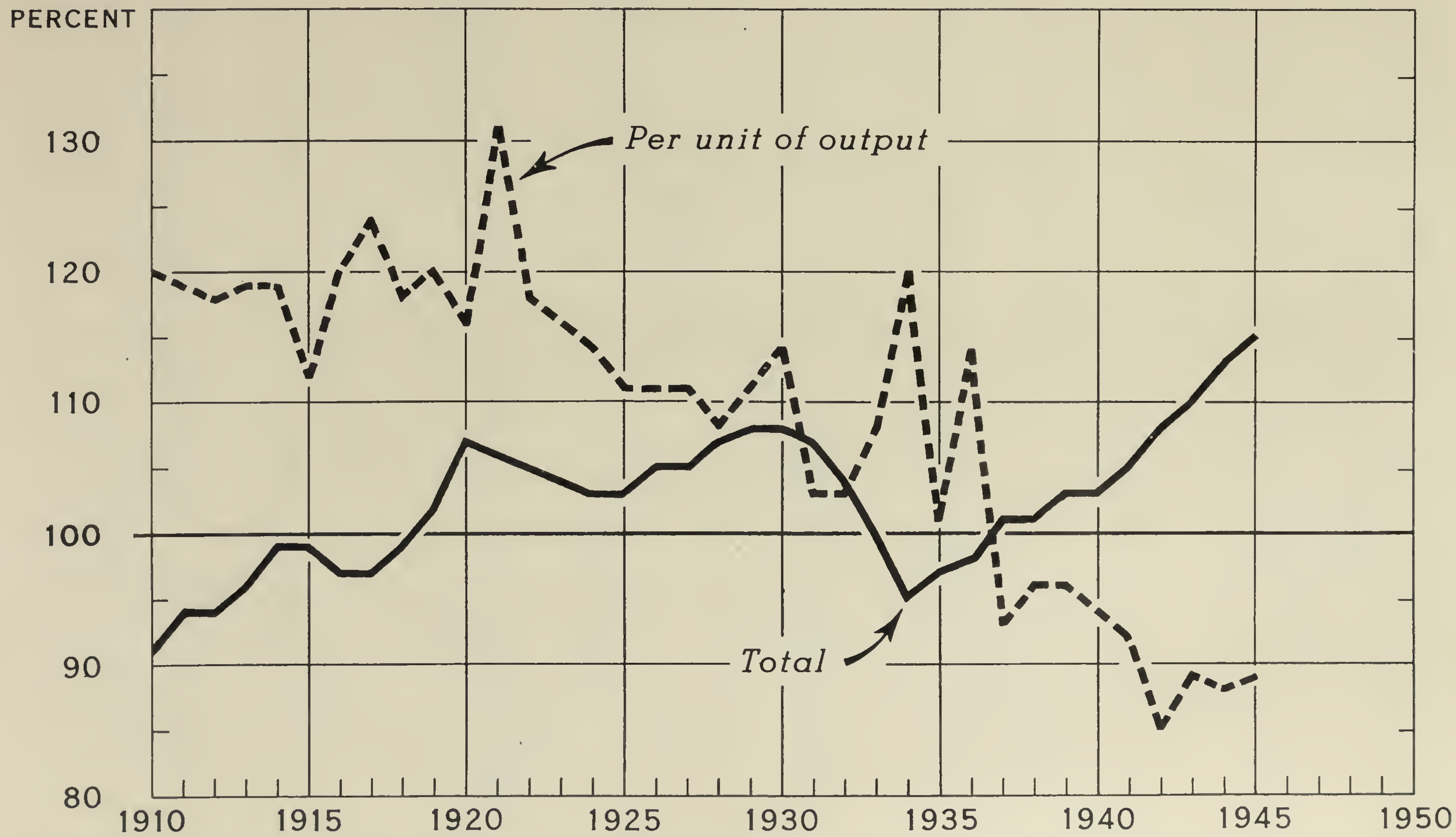
1/ U. S. Department of Agriculture Misc. Pub. 630, "Progress of Farm Mechanization", by Martin R. Cooper, Glen T. Barton, and Albert P. Brodell, October 1947.

# PRODUCTION INPUTS: TOTAL AND PER UNIT OF FARM OUTPUT, UNITED STATES, 1910-45

## INDEX NUMBERS (1935-39=100)



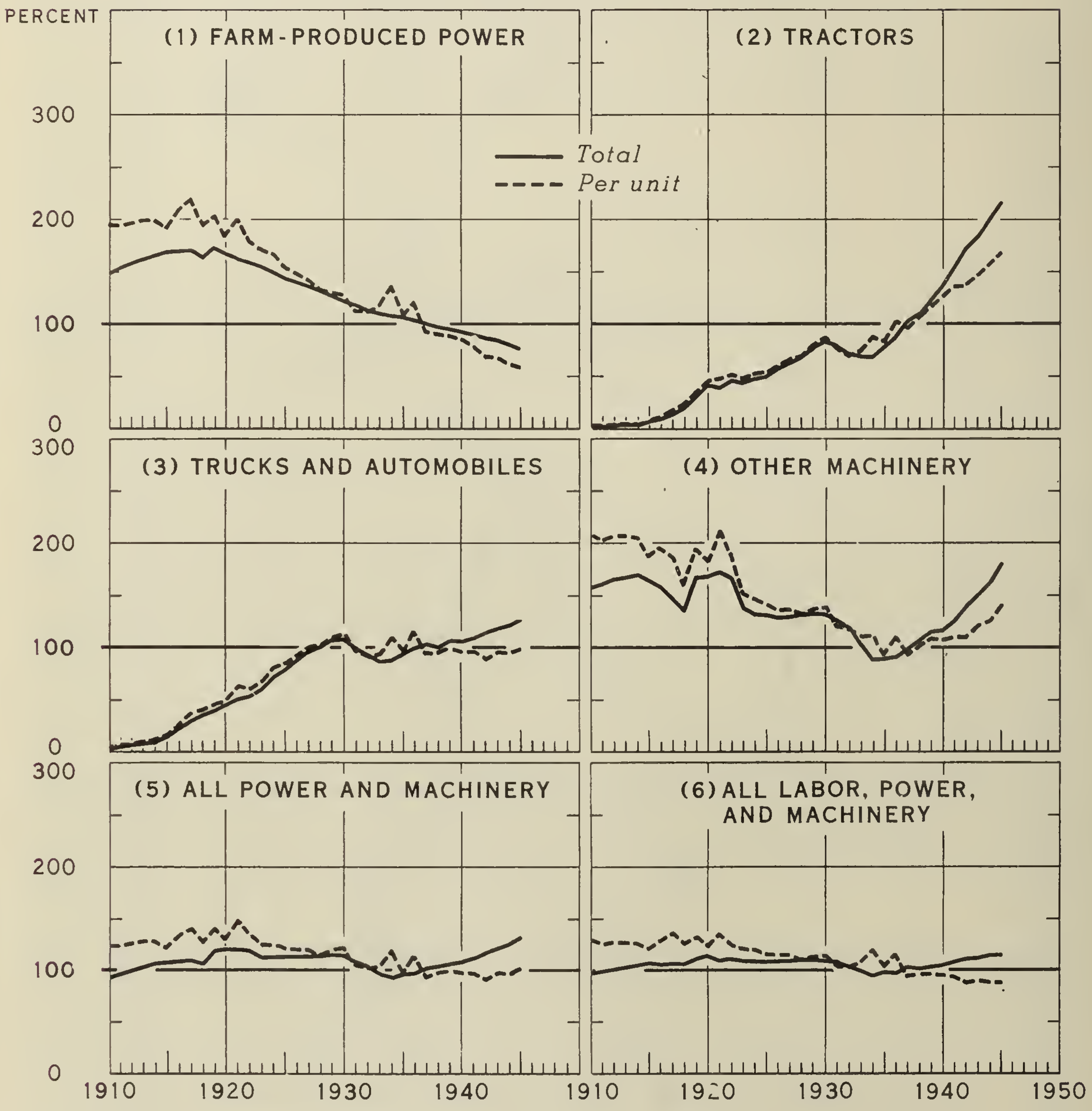
*INPUTS ARE PHYSICAL QUANTITIES OF ALL FARM LABOR, LAND, MACHINERY, POWER, FERTILIZER, AND OTHER MATERIALS AND RESOURCES USED IN FARM PRODUCTION (WEIGHTED BY AVERAGE 1935-39 PRICES)*

U. S. DEPARTMENT OF AGRICULTURE FIGURE 1 NEG. 46635 BUREAU OF AGRICULTURAL ECONOMICS

## PRODUCTION INPUTS OF FARM POWER, MACHINERY AND LABOR: TOTAL AND PER UNIT OF FARM OUTPUT, UNITED STATES, 1910-45

(INPUTS WEIGHTED BY AVERAGE 1935-39 PRICES)

INDEX NUMBERS (1935-39 = 100)



U. S. DEPARTMENT OF AGRICULTURE FIGURE 2 NEG. 46414-A BUREAU OF AGRICULTURAL ECONOMICS

Total volume of production inputs has increased only slightly since 1910. But total farm output has risen by nearly 75 percent. This notable rise in production has been achieved with very little increase in cropland area, fewer farm workers, a change from animal power and machines to mechanical power and machinery, and increased quantities of fertilizer, lime, and other production goods. Generally, increases in physical efficiency in agriculture have been brought about by increasing production per unit of input rather than by decreasing total inputs. Most of the technological developments that resulted in increased efficiency also resulted in greater total volume of farm output.

Total inputs of farm labor, power, and machinery, which account for about two-thirds of the volume of all physical inputs have changed little in the last third of a century. But there have been marked changes in the individual items of the group (figure 2). The most pronounced change has been the substitution of mechanical power of tractors, trucks, and automobiles for animal power of horses and mules. This has increased output per unit of input in two ways. The decline in number of horses and mules on farms and in nonfarm areas has released more than 55 million acres of cropland from the growing of feed for work animals to the production of food and fiber for human use. Thus the net amount of produce for human consumption has been increased. At the same time, mechanical power and associated modern equipment have greatly increased the efficiency of farm workers.

Mechanical power and equipment have displaced both animal power and human power on farms. When inputs of farm labor are combined with those of power and machinery, the total shows virtually no change over the last third of a century (section 6, figure 2). The strong upward trend in farm output, with practically a constant volume of total inputs of farm labor, power, and machinery has reduced physical inputs per unit of output about one-third since World War I. This means that farmers as a group are now using one-third less total labor, power, and machinery combined to produce one unit of farm output than was used a quarter century ago.

Violent fluctuations in prices paid by farmers and in prices received for farm products have tended to overshadow the trends in physical efficiency of farm production. For example, in the depression of the 1930's production efficiency could not possibly offset the effects on farm returns of 40-cent wheat, 6-cent cotton, and 3-cent hogs. Nevertheless, gains in production efficiency have contributed greatly to the long-time rise in real income of farmers. This has compared quite favorably with the long-time increase in real wages of industrial workers.

The future holds great promise of advances in the efficiencies of farm production far surpassing those of the past quarter of a century. Farmers who are able to take advantage of mechanization, technological changes and improved practices will profit not only from lower unit costs but also from the larger output per farm commonly associated with such improvements. Furthermore, farmers who take advantage of such technological developments will be in a better position to weather adverse conditions. Unit production costs, in terms of quantities of cost goods used, will continue to decline except as interrupted by drought, depression and other adverse developments.

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# THE Farm Cost SITUATION

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BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

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SEPTEMBER 1948

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## GENERAL SITUATION

Total farm production costs have mounted continuously for over a decade. This year they are the highest on record—over 3 times the prewar average and are likely to be higher in 1949. Prices for many cost items are expected to be still higher next year. Feed is an exception. Feed prices have declined since early spring and are now well below those of a year ago. They are expected to be lower in 1949 than in 1948. The rise in costs of other items probably will offset wholly or in part the decline in feed costs.

Net farm incomes have risen even more rapidly than costs because farmers have increased their volume of output by more than 30 percent and prices of farm products have risen more rapidly than cost rates. In 1947 net farm income for the country as a whole was the highest on record.

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Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | All commodities 1/ | Farm machinery | Building material other than house | Equipment and supplies 2/ | Feed | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|
| 1910 | 77 | 66 | 68 | 91 | 86 | 99 | - | 82 |
| 1911 | 81 | 66 | 70 | 90 | 99 | 99 | | 83 |
| 1912 | 77 | 66 | 70 | 90 | 84 | 100 | 66 | 86 |
| 1913 | 80 | 66 | 68 | 90 | 99 | 102 | 63 | 88 |
| 1914 | 78 | 66 | 63 | 89 | 94 | 100 | 64 | 86 |
| 1915 | 82 | 68 | 69 | 95 | 93 | 112 | 77 | 87 |
| 1916 | 98 | 70 | 79 | 116 | 120 | 120 | 92 | 96 |
| 1917 | 119 | 80 | 93 | 141 | 170 | 137 | 96 | 119 |
| 1918 | 137 | 102 | 109 | 163 | 179 | 170 | 123 | 150 |
| 1919 | 151 | 105 | 128 | 162 | 195 | 182 | 181 | 175 |
| 1920 | 137 | 109 | 139 | 170 | 127 | 186 | 98 | 205 |
| 1921 | 111 | 105 | 105 | 137 | 90 | 156 | 86 | 131 |
| 1922 | 109 | 93 | 107 | 126 | 114 | 129 | 84 | 129 |
| 1923 | 111 | 97 | 109 | 123 | 124 | 126 | 92 | 144 |
| 1924 | 112 | 101 | 109 | 120 | 131 | 120 | 97 | 147 |
| 1925 | 116 | 101 | 111 | 126 | 131 | 129 | 111 | 149 |
| 1926 | 115 | 101 | 109 | 130 | 127 | 126 | 138 | 152 |
| 1927 | 113 | 101 | 108 | 127 | 128 | 121 | 127 | 152 |
| 1928 | 117 | 101 | 107 | 124 | 137 | 131 | 115 | 152 |
| 1929 | 116 | 100 | 107 | 123 | 134 | 130 | 119 | 153 |
| 1930 | 111 | 100 | 105 | 118 | 122 | 126 | 112 | 142 |
| 1931 | 97 | 99 | 94 | 104 | 86 | 115 | 98 | 110 |
| 1932 | 86 | 93 | 85 | 96 | 64 | 99 | 66 | 81 |
| 1933 | 85 | 91 | 87 | 93 | 71 | 96 | 61 | 72 |
| 1934 | 97 | 95 | 99 | 98 | 98 | 104 | 90 | 81 |
| 1935 | 100 | 96 | 97 | 97 | 105 | 102 | 99 | 88 |
| 1936 | 98 | 98 | 98 | 99 | 104 | 96 | 91 | 94 |
| 1937 | 107 | 101 | 105 | 102 | 121 | 102 | 124 | 107 |
| 1938 | 99 | 104 | 100 | 103 | 85 | 100 | 102 | 106 |
| 1939 | 96 | 101 | 100 | 99 | 85 | 100 | 84 | 105 |
| 1940 | 98 | 100 | 101 | 99 | 94 | 97 | 84 | 107 |
| 1941 | 103 | 103 | 109 | 104 | 101 | 100 | 80 | 131 |
| 1942 | 117 | 108 | 120 | 114 | 125 | 111 | 123 | 171 |
| 1943 | 128 | 111 | 128 | 121 | 150 | 120 | 156 | 224 |
| 1944 | 136 | 114 | 138 | 126 | 165 | 121 | 175 | 268 |
| 1945 | 137 | 116 | 141 | 128 | 163 | 121 | 181 | 297 |
| 1946 | 151 | 120 | 158 | 132 | 194 | 124 | 190 | 321 |
| 1947 | 184 | 137 | 222 | 150 | 233 | 138 | 230 | 346 |
| Jan. | 163 | | | | 196 | | | 339 |
| Feb. | 169 | | | | 192 | | 229 | |
| Mar. | 176 | 128 | 218 | 138 | 212 | | 239 | |
| Apr. | 179 | | | | 219 | 136 | 240 | 337 |
| May | 178 | | | | 215 | | 239 | |
| June | 183 | 138 | 218 | 148 | 229 | | | |
| July | 184 | | | | 233 | | | 343 |
| Aug. | 188 | | | | 247 | | | |
| Sept. | 193 | 141 | 220 | 155 | 264 | 140 | 228 | |
| Oct. | 194 | | | | 264 | | 208 | 343 |
| Nov. | 195 | | | | 265 | | | |
| Dec. | 200 | 142 | 230 | 159 | 277 | | | |
| 1948 | | | | | | | | |
| Jan. | 204 | - | - | - | 291 | - | - | 360 |
| Feb. | 201 | - | - | - | 264 | - | 219 | - |
| Mar. | 201 | 148 | 235 | 163 | 265 | | 221 | |
| Apr. | 203 | - | - | - | 271 | 150 | 220 | 357 |
| May | 204 | - | - | - | 269 | - | 219 | - |
| June | 204 | 159 | 237 | 168 | 266 | - | - | - |
| July | 203 | - | - | - | 254 | - | - | 366 |
| Aug. | 200 | - | - | - | 251 | - | - | - |
| Sept. | 198 | 162 | 238 | 169 | 219 | 155 | 230 | |

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1/ Excluding wages.

2/ Based on prices paid by farmers for 16 items including binder twine, lead arsenate, milk pails, pitchforks, gasoline for autos and trucks, motor oil and tires, and other similar items used on farms for production.

Note:- For a list of items included in this table see "Agricultural Prices" Bureau of Agricultural Economics, April 29, 1946.

However, operators of some types of farms, dairy and poultry particularly, realized slightly lower incomes in 1947 than in 1946.

High prices for feeds mean high incomes for farmers who sell feeds but high costs to farmers who buy. Dairy and poultry farmers generally will benefit in 1948 and 1949 from lower prices for feeds. Operators of all farms in 1948 and 1949 will pay higher prices for building materials, machinery, fertilizer, supplies, labor, etc. With costs for items other than feeds moving upward, and with somewhat lower prices for products sold in 1949, net farm income will be lower for the country as a whole and several types of farms will show a decline from 1947 and 1948.

Cost rates are now increasing more rapidly than prices of farm products. In 1945 the index of cost rates was 157 and the index of prices received for farm products was 188, both index numbers based on 1935-39 = 100. Cost rates increased by 10 percent from 1945 to 1946, 22 percent from 1946 to 1947 and 14 percent from the first 8 month period in 1947 to the first 8 month period in 1948. In the same periods prices received increased by 15 percent, 20 percent and 7 percent respectively.

Farm wage rates are now between 5 and 10 percent higher than a year ago. This higher level is expected to continue through the balance of 1948 and 1949. Industry is competing for labor, but the supply of labor for the remainder of 1948 and for 1949 is expected to be adequate to meet most needs. Because of the larger than usual cotton and potato crops this year, producers of these crops may find it difficult to obtain adequate help at the time they need it.

Prices of farm machinery have gone upward continuously since 1940, and are now at a record high. In June of this year they were 59 percent higher than in 1940; and 15 percent higher than in June 1947. Prices of machinery and also of motor fuel are expected to remain high in 1949. With high machinery and motor fuel prices and lower feed costs, the advantage of machine power compared with animal power in 1949 will be reduced.

Production of farm machinery in 1948 is expected to be the highest on record. It probably will exceed the record production of 1947 by at least 15 percent. Increases in production in 1948 compared with 1947 are expected to be especially pronounced for tractors and tractor machines, supplies of which have not yet caught up with the backlog of orders. A continued high level of production is in prospect for 1949. Supplies of dairy and poultry equipment and many other kinds of machinery and equipment are expected to be adequate to meet needs.

Prices of feed grains and hay have been at a record high level for the first half of 1948. As it became apparent that a record crop of feed grains was being produced, the prices of feed declined substantially. Prices of farm grown feeds, tankage, cottonseed meal and other commercial feeds in September 1948 were well below those in September a year ago.

The number of grain consuming animal units to be fed this coming season (1948-49) is estimated to be a little higher than the number fed last season but considerably below the average of the last 5 years. The feed supply per animal unit is the highest on record and about 24 percent higher than in 1935-39. Livestock prices are at high levels and are relatively higher than prices of feed. It will pay farmers to feed livestock (particularly hogs) more heavily than in the recent past.

The cost of most field seeds will be higher the remainder of 1948 and in the spring of 1949 than a year earlier. Production of seed was small in 1948. On June 30, 1948 stocks of 34 kinds of field seeds were

35 percent below the average for 1942-46. In a few instances supplies are not adequate to meet normal domestic demands for this fall and next spring. It will pay farmers to save seed wherever possible.

The supplies of fertilizer and insecticides and fungicides are expected to be sufficient to meet requirements for next year. Prices of fertilizer have gone up each year since 1940. In the spring of 1948 they were more than 50 percent higher than in 1940. They are higher now than last spring, and probably will average higher in 1949 than in 1948. Prices of fertilizer and prices of farm products are at such levels that will permit farmers to make profitable use of fertilizer. Prices of insecticides and fungicides in 1949 are expected to be near levels prevailing in 1948.

Prices of building materials have mounted rapidly since 1939. They are now nearly 2.5 times the prewar level. Lumber production in 1947 averaged about 38 billion board feet and the production in 1948 is expected to be about the same as in 1947. Despite the high production, prices of lumber in 1948 are the highest on record and are expected to remain high in 1949.

It appears that production of steel products in 1948 also will establish a new high. Prices of these items are considerably higher than in prewar, and supplies of some items are insufficient to meet current needs. The supply of bags, containers and tin cans appears to be adequate to meet the needs of the remainder of this season and for next year.

Costs of obtaining the use of land, whether buying or renting have increased in recent years. Farm land values increased 7 percent during the year ending July 1, 1948. Land values now are 2 percent above the inflationary peak reached in 1920. The value of gross rent paid for the use of leased land has more than doubled since 1941 and now is the highest in 36 years. Cash rents, however, have risen less rapidly. They increased only 75 percent from 1941 to 1947. To many tenants and heavily mortgaged owners, either rent or debt service is the largest single item of expense. Land purchased on credit at present prices will prove costly in event of substantial decline in prices for farm products.

In addition, tax levies also are high. Higher salaries and wage rates, increased services and facilities, and higher prices of materials have placed greater demands and higher costs on local governments.

Despite high cost rates and declining prices of some farm products, there is real opportunity for farmers who manage their enterprises skillfully. Farmers who take full account of cost-price relationships and maintain flexible farming units so as to shift crops and livestock in accordance with better income opportunities, use appropriate amounts of fertilizer and feed wisely will profit in 1949 and in the years ahead. In making new investments for production, farmers should consider if such investments increase efficiency and reduce unit costs, and that they will not incur heavy carrying charges that will prove too burdensome in event of lower prices.

## Farm Labor

Cotton farmers may feel the pinch of an inadequate supply of experienced cotton pickers this fall in view of the large crop, particularly in areas with increased acreage. With about 25 million bushels more potatoes this year than in 1947, potato growers in some areas also may have trouble in finding enough workers to get their crop out of the ground and into storage on time. Foreign workers are being used in some areas, as in Maine and the Red River Valley.

Both acreage and production of sugar beets are lower this year than for the last 2 years and more mechanical pullers, toppers, and loaders will be available than ever before. With normal weather labor shortages are not likely to interfere with harvesting sugar beets.

Other farmers also will have little difficulty in obtaining enough seasonal labor for the remainder of the 1948 harvest. The usual seasonal drop in family workers on farms probably will be larger this fall owing to the larger than usual number of farm youths attending school. The supply of experienced year-round hands will continue to be limited.

It isn't expected that many workers from commercial farms will be taken into the armed forces, but if high industrial employment continues into 1949, the farm labor supply in some areas may be less than in 1948, particularly in the case of regular farm workers. But with the somewhat shorter supply of hired and family workers, some farmers, by making fuller use of mechanical power and associated equipment, can take up some of the slack.

Table 1.- Farm wage rates and related data, United States,
1935-39 average and 1940-48 inclusive
(Index numbers 1935-39 = 100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates | Ratio farm wage rates to | |
|---|---|---|---|---|---|---|---|---|
| | Total: 1/ | Family: 1/ | Hired | Total | Per worker: 3/ | | Production per worker | Gross farm income per worker 4/ |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 108 | 111 | 107 | 96 | 98 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 131 | 112 | 94 |
| 1942 | 95 | 94 | 99 | 123 | 129 | 171 | 133 | 91 |
| 1943 | 94 | 94 | 94 | 120 | 128 | 224 | 175 | 95 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 268 | 199 | 106 |
| 1945 | 90 | 92 | 82 | 123 | 137 | 297 | 217 | 110 |
| 1946 | 92 | 94 | 84 | 126 | 137 | 321 | 234 | 106 |
| 1947 5/ | 93 | 95 | 87 | 121 | 130 | 346 | 266 | 97 |
| 1948 5/ | 93 | 95 | 89 | 128 | 138 | 366 | 265 | 102 |

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1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Because of the increase in volume of production and the increase in the price of farm products, the gross farm income per worker has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1948.
5/ Preliminary.

Farm wages are now between 5 and 10 percent higher than a year ago. This higher level is expected to continue through the remainder of 1948. Farm wages probably will average about the same in 1949 as in 1948. In limited areas wage rates may be somewhat higher in 1949 but the increase probably will not exceed that which took place from 1947 to 1948.

## Farm Power and Machinery

Production of farm machinery in 1948 is expected to be the highest on record and probably will exceed the record production of 1947 by at least 15 percent. A continued high level of production is in prospect for 1949.

Increases in production in 1948 as compared with 1947 are expected to be especially pronounced for tractors and for tractor machines; the supplies of which have been insufficient to meet the current demands. On the other hand, dairy and poultry equipment and many other kinds of machines have been in adequate supply in most areas and the 1948 production of this equipment may show no increase over the 1947 output.

Along with the increased production of farm machinery, there has been an increase in exports over 1947. Approximately one-sixth of the output in 1947 was exported compared with one-eighth for the period 1935-39. Imports of farm machinery will be substantially larger in 1948 than in any previous year and should about offset the increase in exports between 1947 and 1948. United States farmers will receive more new machines in 1948 than in any previous year. Large supplies also are in prospect for 1949.

There has been a rapid increase in numbers of farm automobiles and farm motortrucks since 1946. In 1948 there were about 20 percent or 1,150,000 more automobiles and motortrucks on farms than in 1946. This was the largest increase of any 2-year period. Supplies of motortrucks are reported to be about enough to meet current orders in many areas and generally are expected to be ample in all areas in the near future.

Sales of automobiles and trucks in 1948 probably will show a moderate increase over the relatively high of 4,800,000 units in 1947. Production in 1949 will likely continue at about the 1948 rate.

American farmers have been mechanizing their farms at an unparallelled rate during the last decade. During much of the time there has been a tremendous demand for farm products the prices of which have increased much more than have prices of farm machinery, motor fuel and tires (tables 1 and 2). Farm wage rates also have increased, and in many areas there have been acute labor shortages. High prices for farm products, high farm income, high wage rates and labor shortages stimulated farm mechanization in recent years. The manufacture of tractors and tractor attachments adapted for use on small farms, and the general improvement of tractors and machinery also have given impetus to the rapid increase in farm mechanization.

There are now indications that the advantage of changing from animal to machine power in 1949 may be somewhat less than in recent years. Along with the large crops of 1948 there has been a substantial decline in feed prices. On the other hand, prices of farm machinery in 1948 reached record highs and retail prices of motor fuel were the highest in more than a quarter of a century. Prices of these items will continue high in 1949.

The number of tractors on farms January 1, 1948 was estimated at 3,150,000. This was slightly more than double the 1940 numbers and 350,000 more than a year earlier. The increase from January 1, 1947 to January 1, 1948 was the greatest annual increase on record. United States farmers bought more tractors in the first 9 months of 1948 than for the same period in 1947, and prospects are for large purchases in 1949. For many types of tractor machines, the percentage increase in recent years has been substantially greater than the percentage increase of tractors. The increase in use of tractor machines during the last decade has been much greater for light duty work than for the heavy duty jobs like plowing and disking.

Table 2.- Estimated cost of using farm tractors and of keeping horses and mules, United States, 1935-39 average and 1940-48
(Index numbers 1935-39 = 100)

| Calendar year or period | Horses and mules, all ages |  |  | Number colts on farms under one year of age Jan. 1 | Farm tractors |  |  |  |
|---|---|---|---|---|---|---|---|---|
|  | Number on farm Jan. 1 | Value per head Jan. 1 | Feed cost per head 1/ |  | Number on farm Jan. 1 | Prices paid by farmers for: |  |  |
|  |  |  |  |  |  | New tractors 2/ | Gasoline | Tires |
|  | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 90 | 94 | 101 | 124 | 94 | 95 | 91 |
| 1941 | 90 | 81 | 105 | 98 | 135 | 99 | 99 | 94 |
| 1942 | 87 | 78 | 133 | 85 | 152 | 104 | 103 | 117 |
| 1943 | 84 | 95 | 175 | 69 | 169 | 104 | 104 | 129 |
| 1944 | 80 | 98 | 192 | 62 | 178 | 107 | 104 | 135 |
| 1945 | 76 | 86 | 192 | 54 | 195 | 109 | 103 | 129 |
| 1946 | 70 | 80 | 222 | 41 | 208 | 122 | 106 | 131 |
| 1947 | 64 | 84 | 260 | 35 | 224 | 135 | 117 | 126 |
| 1948 | 58 | 79 | 3/ 296 | 30 | 4/ 253 | 5/ 141 | 6/ 131 | 6/ 124 |

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1/ Based on 25 bushels each of oats and corn and 2 tons of loose hay.
2/ Tractor prices are for medium size (20-29 DHP) wheel tractor equipped with rubber tires.
3/ Average of the first eight months.
4/ Preliminary estimates.
5/ Average prices paid in March.
6/ Average prices paid in March and June.

The colt crop of 1947 was the smallest in more than a century. The rate of disappearance of horses and mules on farms has continued large in recent years, and is expected to be large again in 1949 and in the years immediately ahead.

## Feed

The index of prices of feed grains and hay has been at a record high level for the first half of 1948. In recent months, however, it has become apparent that a record crop of feed grains was being produced and feed prices have declined substantially. The prospect is that they will decline further as the new corn crop becomes available for feed.

The general index of prices paid by farmers for feed in September was considerably below what it was in any of the previous 12 months. The index for September of this year was 219 compared with an average of 293 for the first 6 months of 1948. The average price per 100 pounds of mixed dairy feed on September 15 was $4.01 compared with $4.75 average for the first half of 1948. Laying mash was $4.78 in September compared with around $5.50 average for the first half of 1948. A similar comparison for bran was $2.95 and $4.13, cottonseed meal $4.18 and $5.16, tankage $6.07 and $6.80. All of these prices in September were below those of September a year ago. A further decline in prices of feed grains, mixed feeds, and byproduct feeds seems probable during the current feeding season.

In contrast to feed prices, livestock prices remain at record high levels. A strong demand for meat is the principal reason for the high prices and is likely to continue for several months. The supply of meat will not be increased substantially until the fall and winter of 1949 when the 1949 spring pig crop comes to market.

The index (1935-39 = 100) of livestock prices and livestock product prices in September was 294 compared with an average of 266 for the first 6 months of 1948 and with 269 in September 1947 (table 3).

The ratio of livestock prices to feed prices in September was 125 compared with 89 for the first half of 1948 and with 86 in September 1947. In July 1948 the ratio was above 100 for the first time since May 1947. The ratio is expected to rise further with prospective steady prices for livestock and livestock products and declining prices for feed.

The supply of concentrates available for feed and other purposes for the 1948-49 feeding year is expected to total about 165 million tons compared with 136 million tons a year ago and an average of 155 million tons for the last 5 years. This is near a record supply, being exceeded only in 2 war years when large quantities of wheat were used as feed. There is only a small carryover of feed grains this fall, but we have had record production.

The number of grain consuming animal units to be fed in 1948-49 is estimated at 157 million compared with 154.6 million in 1947-48 and an average of 170 for the previous 5 years. The index of supply of feed concentrates available for feed during the feeding season beginning October 1948 is 36 percent above the 1935-39 base period whereas the number of animal units to be fed are only 10 percent above (1935-39). As a result, the index of feed supply per animal unit is 24 percent above the base and is the highest on record (table 4). The supplies of high protein feeds per animal unit remain high although the supplies of mill feeds and some other by-product feeds are not so high as in recent years. The supply of hay per animal unit is ample in most sections.

This is a year when it will almost certainly pay to feed livestock very heavily. Hogs particularly may be fed profitably to heavy weights. For instance, assume that a farmer has 250-pound hogs in December and is considering holding them another month and selling them at a weight of 300 pounds each. Studies show that it takes 4.8 bushels of corn or the equivalent in other feed to put on an additional 50 pounds on a 250-pound hog. If we assume that the price of corn is $1.40 a bushel and that the price of both the 250 and 300-pound hogs is $25 per 100 pounds, then the return is $1.86 on each $1.00 of feed fed, in putting on the extra 50 pounds. The computation is as follows:

| | |
|---|---|
| Value of 300 pound at $25 per cwt. | $ 75.00 |
| Value of 250 " " $25 " " | $ 62.50 |
| Margin | $ 12.50 |
| Cost of 4.8 bu. corn @ $1.40 | 6.72 |
| Returns per $1.00 of feed cost | 1.86 |

It probably is necessary to have a return of $1.20 or $1.25 per $1.00 of feed cost in order to break even because of the extra labor, time, and risk involved. The returns under the assumed prices are well above the break-even point. The farmer could sell the 300-pound at $1.25 less per 100 pounds of hog, than he could sell the 250-pound hog, and would still get $1.30 for each $1.00 of additional feed cost.

| | |
|---|---|
| Value of 300-pound hog @ $23.75 | $ 71.25 |
| Value of 250 " " " $25.00 | 62.50 |
| Margin | 8.75 |
| Feed cost 4.8 bushels of corn @ $1.40 | 6.72 |

$8.75 ÷ $6.72 = $1.30 return
per $1.00 of feed cost

The seasonal decline in price of about 5 percent that is assumed from December to January is more than occurs in the average year.

It probably will also pay to feed grain heavily to dairy cows this fall and winter. In herds in the Northeast dairy area that have free access to good hay or other roughage and are being fed at the level of 1 pound of grain to 3 pounds of milk, an additional 100 pounds of grain will produce 48 pounds of additional milk but will reduce the hay fed by 76 pounds. Assuming a price of $5.50 per 100 pounds of milk and grain at $2.75 per 100 pounds, the return for $1.00 of additional feed would be as follows:

| | |
|---|---|
| Value of 48 pounds of milk @ $5.50 per hundred pounds | $2.64 |
| Value of 76 pounds of hay @ $28.00 per ton | 1.06 |
| Total credits | 3.70 |
| Cost of 100 pounds grain fed | 2.75 |

Returns per $1.00 of additional grain fed

$ 3.70 ÷ $2.75 = $1.35

On the other hand, in herds that are limited in the amount of good hay or other roughage available and are already being fed at a level of 1 pound of grain to 2 pounds of milk (which is heavy grain feeding), an additional 100 pounds of grain will produce 55 pounds of additional milk (4 percent). The returns at the assumed prices from feeding an additional 100 pounds of grain to these cows are as follows:

| | |
|---|---|
| Value of 55 pounds of milk @ $ 5.50 | $ 3.02 |
| Cost of 100 pounds grain | 2.75 |
| Returns per $1.00 of additional feed cost | 1.10 |

In this particular instance it certainly would pay to feed grain heavily. Any return over $1.00 of grain fed probably could be considered profitable as the extra labor and other costs are negligible.

Summarizing, it probably will pay to feed hogs to heavier weights and to feed dairy cows heavily. More grain than usual will be fed to cattle. Egg-feed-price ratios appear favorable to heavy feeding of laying flocks this winter.

Even with this heavy feeding the carryover of feed grains in the fall of 1949 will be large. Livestock numbers are low with respect to average feed production and it takes time to build up inventories of livestock.

## Seeds

Seed costs have been about the same in 1948 as in 1947 but have been more than twice as high as the average for the prewar years, 1935-39. Farmers paid higher prices last spring than they paid a year earlier for such seeds as red clover, ladino clover, Korean lespedeza, crested wheat grass, rapeseed, seed corn and seed grains but they paid lower prices for alfalfa, timothy, orchard-grass, Kentucky-blue grass, white-clover and brome-grass seeds.

The cost of most field seeds will be higher during the remainder of 1948 and in the spring of 1949 because of shorter supplies resulting from low production this year. Prices received by producers last year for many kinds and varieties of seeds were low in relation to returns from competing cash crops. In some instances prices expected for the 1948 crops of seed continued low up to harvest time. In the case of lupine seed it was not until large quantities of seeds were allowed to go unharvested that prices to producers started to rise. By that time it was too late to

Table 3.- Prices of livestock and feed, 1927-47
(Index numbers 1935-39 = 100)

| Year | | Livestock and livestock product prices 1/ | Feed grains and hay prices 1/ | Ratio of livestock prices to feed prices |
|---|---|---|---|---|
| 1927 | | 127 | 121 | 105 |
| 1928 | | 136 | 130 | 105 |
| 1929 | | 138 | 126 | 110 |
| 1930 | | 117 | 113 | 104 |
| 1931 | | 85 | 78 | 109 |
| 1932 | | 63 | 51 | 124 |
| 1933 | | 62 | 60 | 103 |
| 1934 | | 72 | 100 | 72 |
| 1935 | | 98 | 113 | 87 |
| 1936 | | 103 | 107 | 96 |
| 1937 | | 109 | 132 | 83 |
| 1938 | | 97 | 75 | 129 |
| 1939 | | 93 | 73 | 127 |
| 1940 | | 96 | 86 | 112 |
| 1941 | | 120 | 94 | 128 |
| 1942 | | 148 | 117 | 126 |
| 1943 | | 172 | 155 | 111 |
| 1944 | | 166 | 175 | 95 |
| 1945 | | 174 | 170 | 102 |
| 1946 | | 206 | 206 | 100 |
| 1947 | | 251 | 260 | 97 |
| 1 1948 | Jan. | 280 | 335 | 84 |
| | Feb. | 256 | 275 | 93 |
| | Mar. | 258 | 300 | 86 |
| | Apr. | 260 | 307 | 85 |
| | May | 264 | 297 | 89 |
| | June | 279 | 293 | 95 |
| | July | 294 | 270 | 109 |
| | Aug. | 294 | 248 | 119 |
| | Sept. | 294 | 235 | 125 |

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1/ Calendar year. The factors for converting index numbers from August 1909-July 1914 = 100 to 1935-39 = 100 are: livestock and livestock products, 116.6; feed grains and hay, 94.8.

Table 4.- Relation of supply of concentrates available for feed to number of livestock 1926-48

(Index numbers 1935-36 to 1939-40 = 100)

| Feeding year | Supply of feed concentrates available for feed 1/ | Animal units of grain consuming livestock fed in year 2/ | Supply of feed per animal unit 3/ |
|---|---|---|---|
| 1926-27 | 105 | 106 | 99 |
| 1927-28 | 103 | 107 | 96 |
| 1928-29 | 106 | 106 | 100 |
| 1929-30 | 103 | 107 | 96 |
| 1930-31 | 96 | 106 | 91 |
| 1931-32 | 106 | 109 | 97 |
| 1932-33 | 119 | 111 | 107 |
| 1933-34 | 98 | 107 | 92 |
| 1934-35 | 68 | 91 | 75 |
| 1935-36 | 97 | 96 | 101 |
| 1936-37 | 74 | 96 | 77 |
| 1937-38 | 101 | 95 | 106 |
| 1938-39 | 111 | 104 | 107 |
| 1939-40 | 116 | 109 | 106 |
| 1940-41 | 120 | 109 | 110 |
| 1941-42 | 128 | 117 | 109 |
| 1942-43 | 148 | 134 | 110 |
| 1943-44 | 141 | 135 | 104 |
| 1944-45 | 132 | 121 | 109 |
| 1945-46 | 131 | 117 | 112 |
| 1946-47 | 130 | 112 | 116 |
| 1947-48 | 114 | 108 | 106 |
| 1948-49 | 136 | 110 | 124 |

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1/ Supply of concentrates year beginning October less quantity used for industry, food, seed, and exports.

2/ Animal units fed in year beginning October.

3/ Column 1 divided by column 2.

save a large part of this seed crop. Stocks of 34 kinds of field seeds on June 30 were 35 percent below the 1942-46 average.

The cost of winter cover crop seeds will be considerably higher this fall than in previous years. The 1948 production of the principal winter-cover crop seeds (Austrian winter peas, vetches, rye grasses, crimson clover and lupine) was nearly one-fourth less than the 1947 production. Stocks carried over by the Government moved rapidly into trade channels and prices offered to producers rose to record high as the shortages of some kinds became apparent.

Other important grass seeds will also cost more. Last fall, supplies of timothy, redtop, Kentucky-blue grass, and orchard-grass seeds exceeded the normal rate of consumption by about 50 percent whereas supplies for seeding this fall and next spring are only slightly above the quantities seeded a year earlier. Therefore, local shortages due to maldistribution of supplies are likely to occur. The 1948 crop of timothy seed, the smallest since 1934, was only 40 percent as large as the 1947 crop. Only half as much redtop and Kentucky-blue grass seed was harvested this year as in 1947. Although the 1948 production of orchard-grass seed was only 80 percent of last year's figure, supplies are plentiful as a result of the heavy carry-over.

It is too early to predict with equal confidence what the supply is likely to be for the more important legume seeds. The cost of alfalfa and red-clover seeds will depend on the size of the 1948 crops which will not be known until more of these crops have been harvested.

The favorable growing conditions, the relatively high prices received by producers for these seeds last year, and the short supply of grass seeds probably will influence growers to save all the seed they can. The supply of alsike-clover seed is reported to be 14 percent larger than in 1947 and 32 percent above the 1942-46 average. The white clover seed crop this year was the third largest on record and only slightly smaller than last year's crop while the 1948 production of ladino clover was 42 percent above the previous record crop harvested in 1946.

The high prices that are expected to prevail for field seeds, until another crop is harvested at least, probably will stimulate a substantial increase in seed production in 1949.

## Fertilizers

Increase in fertilizer costs from 1947 to 1948 will be larger than from 1946 to 1947. Costs in 1946, 1947, and the first half of 1948 were 24,38, and 50 percent respectively, above those prevailing during 1935-39. The continued rise in fertilizer costs during these years was more than offset by increases in prices received by farmers. But it is probable that during 1949 fertilizer prices will be higher relative to prices received by farmers. During the first half of 1948 the ratio of fertilizer prices to prices farmers received was about 80 percent above prewar. Except for certain cash crops, most farmers have not used as much fertilizer in the past as would have been profitable even at lower prices for crops. It seems that continued increases in the consumption of fertilizer in the immediate future can be expected within the limits of available supplies.

Price declines for some of the major cash crops may call for new combinations of cost items in farm production. For example, fertilizers can be used profitably to promote better land use, particularly if fertilizer costs do not increase relative to other operating costs. Judicious use of fertilizers will increase yields per acre and total production without extending the scale of operations. For this reason it may be advisable, in looking toward 1949, to select only the most suitable lands for growing of cash crops, and to give special attention to cultural practices. This adjustment should give a more profitable combination of land and fertilizer use on cash crops, and permit more fertilizer to be used on feed crops and pasture during times when feeding ratios may become increasingly favorable for profitable livestock production.

Economical use of fertilizer on the farm requires consideration of more than the relation between individual crop prices and fertilizer costs for low cost of production involves an economical use of all resources. Increasing the productivity of farm land, including pasture, through use of fertilizers, is often one means of obtaining the most profitable combination of all resources on the farm.

In terms of plant nutrients, the quantities of fertilizer available for use in the year ending June 30, 1948, were more than 2.5 times the average consumption in 1935-39. Preliminary estimates indicate that supplies will be about 7 percent larger in 1948-49 than in 1947-48. Phosphoric acid and potash appear to be in more plentiful supply than nitrogen. Consumption of all three of the principal plant nutrients almost certainly will be below the quantities that would be profitable if used to best advantage in balanced systems of farming.

## Building Materials, Supplies and Containers

Production and prices of building materials and supplies reached record levels in 1948. Production of lumber in 1948 may exceed the 1947 output of 38 billion board feet; the highest since 1929. A high rate of production is expected to continue in 1949. Production of steel products during the first half of 1948 indicates that the output this year will be at a new high.

Prices of building materials will be high in 1949. The weighted average price of all building materials rose 9 percent from June 1947 to June 1948. Prices are now at record levels and nearly 2.5 times the prewar average. Lumber prices rose about 17 percent during the same period, and also are at a record high.

On June 30, 1948 total stocks of lumber at mills, concentration points, and retail yards were 10.7 billion board feet compared with 5.4 billion board feet on March 31, 1946, the low point in recent history. On June 30, 1948 stocks in retail yards alone, which largely determine the immediate availability of lumber to farmers, were 4.8 billion board feet compared with 4.1 billion board feet a year earlier, and 1.7 billion board feet on March 31, 1946.

Production of cement this year is running ahead of 1947, a year of record output. However, some areas will continue to be short of cement, particularly some types, in the next few months.

The rate of production of nails and staples, barbed wire, woven fence, bale-ties, galvanized sheet metal, etc., during the first half of 1948 indicates that production this year will surpass the high level of production last year. But it is still difficult to obtain many of these steel products. Pipe and metal lath are being used in tremendous quantities by the building trade. Sheet steel is in tight supply because of heavy demand for automobiles, for farm machinery, for the building of warehouses and other construction. The production of bale ties in 1948 will be more than double the 1936-40 average.

Despite increased production of steel products the prices continue to rise. At the end of August 1948 the base price of all finished steel was 18 percent higher and the price of wire nails was 22 percent higher than a year earlier.

The supply of bags, wooden containers, and tin cans appears to be adequate for the remainder of 1948 and for the coming season. Imports of burlap from India are not meeting earlier expectations but the supply of burlap bags, including used bags, will meet requirements. The price of used burlap bags is somewhat lower than a year ago; the price of some kinds is down as much as one-fourth. Supplies of open mesh, cotton and paper bags are adequate. The supply of wooden boxes, baskets, crates, etc., will be large enough for the needs during the remainder of this season and next year. Similarly, there will be enough tin cans for packing fruits and vegetables, although the limited supply of tinplate may cause some local and temporary shortages.

## Insecticides and Fungicides

Raw materials and facilities needed for the manufacture and distribution of insecticides and fungicides are generally available. There is no indication that the insecticides and fungicides needed for the 1949 season will not be fully adequate. Nicotine is the one insecticidal material for which the supply may be somewhat below demand. But it now appears that the supply of nicotine insecticides will be more nearly in balance with demand in 1949 than in any other recent year.

Because of the many new insecticidal materials and the uncertainty regarding the quantities of the different kinds that may be used in a given section, there may be local shortages even during a period of generally favorable supply. Farmers should determine as promptly as possible, therefore, the kinds and quantities of insecticides and fungicides that they propose to use and give this information to their supplier so he will have full opportunity to obtain the materials.

Prices of insecticides and fungicides in 1949 will be about the same as in 1948.

## Farm Land Values and Rentals

The costs of obtaining the use of land, whether by buying or renting, have increased sharply in recent years. To many tenants and heavily mortgaged owners, either rent or debt service is the largest single item of expense. These costs tend to remain relatively fixed regardless of changes in farm income and they are likely to absorb an increasing proportion of total farm income in the years ahead. In most areas, it costs more now than ever before to buy and equip a farm large enough to make effective use of modern farm machinery. At present market prices for land, the down payment required for a safe equity is often more than the total purchase price of the same farm a few years ago.

Farm land values for the country as a whole increased 7 percent during the year ended July 1, 1948 (table 5). This brought values to double the level prevailing in 1941 and 2 percent above the inflationary peak reached in 1920. The level of values in 35 States is now equal to or above the peak of values in 1920. The Corn Belt and Northern Plains States are the only large areas where land values are still below their 1920 peak. These are among the areas where the World War I boom pushed values the highest, and in which values dropped the most during the 1930's. The present inflation in land values appears to have reached its highest level in the Southeastern States, especially in North Carolina, Kentucky, Tennessee, and Alabama.

Continued high levels of income will tend to hold land values at their present level and may cause even further increases. The value of the gross rent paid for the use of leased land in the United States has more than doubled since 1941. The present level of land returns, both in total and in relation to values, is the highest in 36 years. The share of the crop paid as rent has changed relatively little in recent years, but the value of this share has gone up along with the increase in prices of farm products. Cash rent, however, has risen at a much slower rate; it increased only 75 percent from 1941 to 1947. As cash rents are less flexible than are share rents, cash rents per acre probably will continue to increase for a year or two after farm income starts downward.

Despite the large volume of farms sold in recent years, probably not more than 15 percent of all land buyers have created mortgage debts large enough to become burdensome in the future. Many owners have strengthened their financial position by making large principal payments while farm income is high. Those who have not will find it necessary to set aside an increasing proportion of their income for interest and principal repayments if prices decline. It is still possible for many thousands of farmers to be caught again in a squeeze between high fixed land costs and a shrinking net farm income.

## Interest, Taxes and Insurance

Interest payments - Total interest charges on farm real estate loans are expected to be about 4 percent higher in 1948 than they were in 1947. This compares with an increase of a little more than 2 percent in 1947, the only other year since 1922 to show an increase. But total farm-mortgage interest payments will be well below what they were at the beginning of World War II. Furthermore, only about a third or less of all farms are mortgaged.

Table 5.- Farm real estate: Index numbers of estimated average value per acre by geographic divisions, 1920 and 1948, with selected comparisons 1/

| Geographic divisions | Index numbers (1912-14 = 100) | | | Increase | | | Ratio |
|---|---|---|---|---|---|---|---|
| | 1920 | 1948 | | 1915 to 1920 | 1941 to 1948 | July 1947 to July 1948 | July 1948 to 1920 |
| | | March | July | Percent | Percent | Percent | Percent |
| New England | 140 | 159 | 161 | 41 | 50 | 5 | 115 |
| Middle Atlantic | 136 | 151 | 153 | 36 | 68 | 6 | 112 |
| East North Central | 161 | 161 | 166 | 55 | 108 | 9 | 103 |
| West North Central | 184 | 135 | 138 | 75 | 112 | 12 | 75 |
| South Atlantic | 198 | 223 | 228 | 102 | 107 | 6 | 115 |
| East South Central | 199 | 256 | 259 | 101 | 125 | 7 | 130 |
| West South Central | 177 | 190 | 199 | 77 | 101 | 13 | 112 |
| Mountain | 151 | 161 | 166 | 54 | 113 | 8 | 110 |
| Pacific | 156 | 210 | 207 | 46 | 90 | -4 | 133 |
| United States | 170 | 170 | 174 | 65 | 105 | 7 | 102 |

1/ Farm land with improvements as of March 1, except where otherwise indicated.

The larger volume of outstanding farm-mortgage loans is the chief explanation for the higher interest payments in 1948. Interest rates have changed only a little, but the past year has shown some strengthening in interest rates although funds are readily available. An increasing proportion of the outstanding farm-mortgage loans are now held by lenders who charge higher interest rates. New loans made during the first half of 1948 were down slightly from what they were during the same period in 1947. But repayments apparently are much less, with more of the farmers' income going for equipment, improvements, and family living.

The amount of interest payable on the non-real-estate debt of farmers is expected to be higher in 1948 than in 1947. The dollar amount of farmer non-real-estate debt to principal lending institutions increased about 21 percent in the 12-month period ended June 30, 1948. This is roughly indicative of the increase to be expected in the amount of interest payable on such loans. Interest rates on these loans are no lower and possibly may be higher than in 1947. During the last several months, Federal Reserve policy and other factors have had a mildly tightening influence on the money market. But changes in interest rates usually come slowly and, until the present time, these rates to farmers probably have not been affected.

Taxes - Tax levies imposed on farm property in 1947, payable for the most part late in 1947 and early in 1948, averaged about 15 percent higher than similar levies made in 1946. Farm real estate taxes for the country as a whole rose for the fourth consecutive year. The index (1909-13 = 100) of these taxes per acre was 254 in 1947 compared with 222 in 1946.

Taxes per $100 value of farm real estate increased to $0.96 in 1947 after remaining at $0.90 for 2 years (1945 and 1946). This is the first increase in taxes in relation to farm real estate values to appear in nearly a decade. For several years preceding 1944, taxes per $100 of value fell each year because values of farm land increased substantially whereas taxes per acre varied relatively little. In 1945 and 1946 percentage increases in taxes per acre were matched by increases in land values. In 1947 farm land values continued to rise but taxes advanced relatively more.

Estimated Federal and State income tax payments by farmers in 1948 (made on 1947 income), which may reach one billion dollars, exceeded farm property levies for 1947. Farmers' payments of excise taxes and other taxes continued to climb. For the first time some of the States gave local governments the right to levy general sales taxes. It is possible that such tax levies may become operative in many States and that pressure on property levies as a source of revenue may be reduced. But whether this will result in lower total taxes paid by rural people is not known.

The increased farm property levies in 1947 resulted from a continuation of the influences of previous years, though the relative importance of various factors appears to be changed. Higher rates of pay for teachers and other public employees, together with higher costs of materials and supplies, led to many of the increases in tax rates. Changes in State and local Government services also were considerable in some communities. Available evidence suggests that the general price level will be a major factor influencing the trend in farm property taxes for the next few years.

Insurance - The average insurance premiums paid by farmers probably will be higher in 1948 than in 1947, principally because of further increases in the amounts of fire and windstorm insurance taken by some farmers to cover the higher property replacement costs. In 1947 farm fire losses in dollar terms were a record high; this was largely owing to the higher property values in 1947. Reserves per $1,000 of insurance held by farmers' mutual insurance associations have increased more rapidly, however, than has their volume of insurance so that in many cases the increased losses can be absorbed without much, if any, increase in rates.

Farmer purchases of hail insurance on growing crops, particularly high in 1946 and 1947, probably were down a little in 1948. The reason may be traced mostly to the poor winter wheat prospects in the Southwest in the fall of 1947.

Federal crop insurance is no longer available nationally, but is now being offered experimentally in only a few counties and on selected crops.

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# E Farm Cost SITUATION

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UNITED STATES DEPARTMENT OF AGRICULTURE

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## GENERAL SITUATION

Farm cost rates, for the most part, will continue high again in 1949. A few cost rates, notably feed, will be lower in 1949 than in 1948. As a result, individual farmer's total cost will be affected differently depending largely on type of farm he is operating. Livestock feeders in general will have lower cost rates in 1949 than a year ago, but operators of other types of farms probably will be faced with higher costs. For the country as a whole, farmers' total costs may be around 5 percent lower in 1949 than in 1948.

Farm costs in 1948 continued the upward swing they have maintained for over a decade. Feed costs were the only important items in the farmer's array of expenditures that showed any marked decline during the year. The index of feed prices in 1948 declined almost steadily from a

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Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39=100)

| Year | All commodities 1/ | Farm machinery | Building material other than house | Equipment and supplies 2/ | Feed | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|
| 1910 | 77 | 66 | 68 | 91 | 86 | 99 | - | 82 |
| 1911 | 81 | 66 | 70 | 90 | 99 | 99 | | 83 |
| 1912 | 77 | 66 | 70 | 90 | 84 | 100 | 66 | 86 |
| 1913 | 80 | 66 | 68 | 90 | 99 | 102 | 63 | 88 |
| 1914 | 78 | 66 | 63 | 89 | 94 | 100 | 64 | 86 |
| 1915 | 82 | 68 | 69 | 95 | 93 | 112 | 77 | 87 |
| 1916 | 98 | 70 | 79 | 116 | 120 | 120 | 92 | 96 |
| 1917 | 119 | 80 | 93 | 141 | 170 | 137 | 96 | 119 |
| 1918 | 137 | 102 | 109 | 163 | 179 | 170 | 123 | 150 |
| 1919 | 151 | 105 | 128 | 162 | 195 | 182 | 181 | 175 |
| 1920 | 137 | 109 | 139 | 170 | 127 | 186 | 98 | 205 |
| 1921 | 111 | 105 | 105 | 137 | 90 | 156 | 86 | 131 |
| 1922 | 109 | 93 | 107 | 126 | 114 | 129 | 84 | 129 |
| 1923 | 111 | 97 | 109 | 123 | 124 | 126 | 92 | 144 |
| 1924 | 112 | 101 | 109 | 120 | 131 | 120 | 97 | 147 |
| 1925 | 116 | 101 | 111 | 126 | 131 | 129 | 111 | 149 |
| 1926 | 115 | 101 | 109 | 130 | 127 | 126 | 138 | 152 |
| 1927 | 113 | 101 | 108 | 127 | 128 | 121 | 127 | 152 |
| 1928 | 117 | 101 | 107 | 124 | 137 | 131 | 115 | 152 |
| 1929 | 116 | 100 | 107 | 123 | 134 | 130 | 119 | 153 |
| 1930 | 111 | 100 | 105 | 118 | 122 | 126 | 112 | 142 |
| 1931 | 97 | 99 | 94 | 104 | 86 | 115 | 98 | 110 |
| 1932 | 86 | 93 | 85 | 96 | 64 | 99 | 66 | 81 |
| 1933 | 85 | 91 | 87 | 93 | 71 | 96 | 61 | 72 |
| 1934 | 97 | 95 | 99 | 98 | 98 | 104 | 90 | 81 |
| 1935 | 100 | 96 | 97 | 97 | 105 | 102 | 99 | 88 |
| 1936 | 98 | 98 | 98 | 99 | 104 | 96 | 91 | 94 |
| 1937 | 107 | 101 | 105 | 102 | 121 | 102 | 124 | 107 |
| 1938 | 99 | 104 | 100 | 103 | 85 | 100 | 102 | 106 |
| 1939 | 96 | 101 | 100 | 99 | 85 | 100 | 84 | 105 |
| 1940 | 98 | 100 | 101 | 99 | 94 | 97 | 84 | 107 |
| 1941 | 103 | 103 | 109 | 104 | 101 | 100 | 80 | 131 |
| 1942 | 117 | 108 | 120 | 114 | 125 | 111 | 123 | 171 |
| 1943 | 128 | 111 | 128 | 121 | 150 | 120 | 156 | 224 |
| 1944 | 136 | 114 | 138 | 126 | 165 | 121 | 175 | 268 |
| 1945 | 137 | 116 | 141 | 128 | 163 | 121 | 181 | 297 |
| 1946 | 151 | 120 | 158 | 132 | 194 | 124 | 190 | 321 |
| 1947 | 184 | 137 | 222 | 150 | 235 | 138 | 230 | 346 |
| 1948 | 201 | 160 | 237 | 168 | 246 | 152 | 224 | 367 |
| Jan. | 204 | - | - | - | 291 | - | - | 360 |
| Feb. | 201 | - | - | - | 264 | - | 219 | - |
| Mar. | 201 | 148 | 235 | 165 | 267 | | 221 | |
| Apr. | 203 | - | - | - | 271 | 150 | 220 | 357 |
| May | 204 | - | - | - | 269 | - | 219 | - |
| June | 204 | 159 | 237 | 168 | 266 | - | - | - |
| July | 203 | - | - | - | 254 | - | - | 366 |
| Aug. | 200 | - | - | - | 231 | - | - | - |
| Sept. | 199 | 164 | 239 | 170 | 220 | 155 | 230 | - |
| Oct. | 196 | - | - | - | 205 | - | 236 | 363 |
| Nov. | 196 | - | - | - | 202 | - | - | - |
| Dec. | 197 | 168 | 236 | 172 | 206 | - | - | - |
| 1949 | | | | | | | | |
| Jan. | 197 | - | - | - | 206 | - | - | 375 |
| Feb. | 196 | - | - | - | 196 | - | 261 | - |

---

1/ Excluding wages.

2/ Based on prices paid by farmers for 16 items including binder twine, lead arsenate, milk pails, pitchforks, gasoline for autos and trucks, motor oil and tires, and other similar items used on farms for production.

Note:- For a list of items included in this table see "Agricultural Prices" Bureau of Agricultural Economics, April 29, 1946.

high of 291 in January 1948 to 202 in November; a decline of over 30 percent, but even so the average for 1948 was 4 percent higher than in 1947. The index of all prices paid by farmers for production goods (1935-39=100) averaged 201 for 1948 compared with 184 for 1947.

Farm costs and cost rates lag behind farm prices and incomes when prices rise, but they also lag behind and remain relatively higher than farm prices when prices decline. As a result, increases in net farm incomes are accentuated as prices rise, but they also are reduced relatively more when prices decline and costs remain high. Last year was the first in over a decade when costs increased faster than did prices received, and despite relatively high production, some important types of farms had lower net farm returns than in 1947. It is highly probable that more farmers in 1949 will find their net returns lower than in 1948.

Despite the current prospects for higher cost rates and lower prices of many farm products, net incomes will be sufficiently high in 1949 to allow many farmers to improve their financial positions. In the first place, many farmers are more efficient producers than ever before. Operators of some types of farms (particularly crop farms) over a period of years have cut substantially their input requirements per unit of production. Second, they are operating larger farms and have more opportunity to maximize returns by making necessary alterations and adjustments in individual enterprises. Third, many operators have reduced their debts and are in a better position to weather financial difficulties.

On the other hand, many farmers are faced with increased cash costs. Replacing horse-and-mule power with mechanical power means larger cash outlays for auxiliary equipment, motor fuels, and replacements. Other improvements on the farm and in the home have increased cash outlays.

Farm wage rates continued to rise through 1948 and averaged about 6 percent higher than in 1947. Farm wage rates probably will decline during the year in some areas, and the supply for the most part will be adequate.

Prices of farm machinery continued to increase during 1948 and averaged about 17 percent higher in 1948 than in 1947. They increased slightly more during 1948 than during 1947. Compared with the prewar base, 1935-39, machinery prices are not high compared with farm product prices.

New farm machinery plants have been coming into production, and with more adequate supplies of labor and materials conditions are favorable for a further increase in production in 1949. However, with a decline in 1949 of farm product prices and farm incomes, and with farm machinery prices at record high levels, the quantity of farm machinery purchases by U.S. farmers in 1949 may be slightly below the record purchases in 1948.

Stocks of feed grains on January 1 were the largest on record both in total and in relation to the number of grain consuming livestock. Prices of feed grains are expected to average 15 to 20 percent lower in 1949 than in 1948, and it will continue to be profitable to feed milk cows heavily and to feed other livestock to heavier weights.

Farmers in general may find their total bill for seeds lower in 1949 than in 1948, but the reduction will not be large. Retail prices of 18 out of 30 important field seeds showed some decline in February compared to a year ago. Timothy and redtop, however, have more than doubled in price since last year, mostly because of the small crops in 1948. Supplies of most seeds, including vegetable seeds, are adequate to meet expected demands.

Fertilizer prices in 1948 averaged a little more than 10 percent higher than in 1947, and they are now slightly higher than a year ago. However, considering fertilizer prices in relation to prices of farm products, it will pay most farmers to increase the use of fertilizer. Fertilizer supplies are expected to be larger in 1949 than in 1948. But even with these record levels, production of nitrogen and potash may be still less than farmers would like to use.

Prices of lumber in 1949 are expected to average from 5 to 10 percent lower than in 1948, but prices of most other building supplies and containers are expected to remain near present levels with some tendency to decline on some items.

Supplies of building materials, containers, and miscellaneous items improved during 1948, and production and greater availability are expected to continue in 1949. No shortages of these materials will hamper agricultural production in 1949.

With the exception of some insecticides such as those containing nicotine, rotenone, and pyrethrum, supplies of most insecticides and fungicides will be adequate to meet all demands. Some new kinds of insecticides will be available. Farmers can help speed distribution by indicating promptly to their suppliers the kind and approximate quantities of insecticides and fungicides they plan to use. No appreciable price change is expected as the season develops.

The cost of buying and equipping a farm is at a record high. The average value of farm land last November was the highest on record and about 4 percent higher than in 1920. Some areas, however, showed a decline. Preliminary estimates for March 1949 show the first general tendency for land values to level off since before the war. Farm land continued to yield a high return in 1948, although the rate was slightly below the previous year.

Preliminary reports indicate that tax rates on farm property increased again in 1948 for the fifth consecutive year. Still greater demands upon the revenues of local governments in 1949 will add to the pressure for higher tax rates.

Interest rates on farm mortgages and other debts have not changed materially. Farmers have increased their borrowings and the proportion borrowed from the higher rate lenders has increased. Taxes and interest on mortgage-indebtedness do not now represent a large proportion of the total costs for many farmers but if prices decline, such obligations will prove more burdensome.

## Farm Labor

The supply of farm labor this year probably will be somewhat greater than in 1948. Generally ample supplies of farm machinery will help make possible relatively high production per farm worker. Greatly increased use of mechanical harvesting equipment will ease the seasonal labor situation in most sugar beet areas which have been among the tightest labor spots in recent years. Nonfarm competition for potential farm workers, especially in rural areas, will be less than a year ago. Despite the prospective general increase in availability of farm labor, however, farmers in some local areas may experience difficulty in securing sufficient workers at periods of peak seasonal demand.

On the average, farm wage rates probably will hold close to those of 1948. Although wage rates may be higher than a year ago in some local areas, they will tend to remain stable or decline in most areas. Farm wage rates in 1948 were over 3.5 times their prewar average (table 1).

## Farm Power and Machinery

Although the production capacity of farm machinery plants has increased and supplies of labor and materials are more adequate now than for any recent year, production of farm machinery and equipment in 1949 may be somewhat less than the record production of 1948. But, because the backlog of orders for machinery has been sharply reduced, many items that were in short supply a year ago are now readily obtainable with only a few items likely to be in short supply by the end of 1949. It appears, however, that production will be reduced in line with farmer's purchases of machinery because of declines in prices of farm products and farm incomes and increases in prices of farm machinery. Then too, the backlog of farm machinery needs has been about filled.

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-48 inclusive
(Index numbers 1935-39=100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates | Ratio of farm wage rates to | |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ | | Production per worker | Gross farm income per worker 4/ |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 108 | 111 | 107 | 96 | 98 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 131 | 112 | 94 |
| 1942 | 95 | 94 | 99 | 123 | 129 | 171 | 133 | 91 |
| 1943 | 94 | 94 | 94 | 120 | 128 | 224 | 175 | 95 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 268 | 199 | 106 |
| 1945 | 90 | 92 | 82 | 123 | 137 | 297 | 217 | 110 |
| 1946 | 92 | 94 | 84 | 126 | 137 | 321 | 234 | 106 |
| 1947 | 93 | 95 | 87 | 121 | 130 | 346 | 266 | 97 |
| 1948 5/ | 92 | 93 | 89 | 130 | 141 | 367 | 260 | 99 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Because of the increase in volume of production and the increase in the price of farm products, the gross farm income per worker has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1948.
5/ Preliminary.

Large tractors continue in short supply in many areas and the demand is strong for self-propelled combines and some other new types of machines which have increased rapidly in numbers and in use. Production of such items likely will be increased in 1949.

Complete details of 1948 production are not yet available but it is expected that total output of farm machinery, including all crawler tractors, was at least 20 percent above the previous high in 1947. It exceeded the average yearly production of 1935-39 by more than 250 percent. Production of wheel tractors in 1948 approximated 529,000 units compared with about 181,000 units for the prewar period; production of crawler tractors was only 80 percent above prewar. In 1948 windrow pick-up balers, forage harvesters, combines, corn pickers and many other farm machines were produced at new high levels.

More farm machinery was exported in 1948 than in any previous year. Exports in 1948 were about 14 percent above those of 1947. They amounted to about 16 percent of the U.S. production in 1947 and 1948.

The United States also imported more farm machinery in 1948 than in any previous year. Our imports come principally from Canada and the United Kingdom, and consist chiefly of wheel tractors and combines.

Exports of wheel tractors amounted to about 100,000 units and imports to about 24,000 units in 1948. Almost as many combines were imported as were exported in 1948. About 4 percent of the farm machinery bought by our farmers in 1948 was imported.

Although there is still a strong foreign demand for American farm machinery, exports in 1949 may decline moderately from the highs of 1948, owing principally to dollar shortages in importing countries, and increasing foreign production of farm machinery. Export demand is expected to be most pronounced for wheel and crawler tractors adapted for using heavy motor fuels and for suitable equipment of these tractors.

Prices of farm machinery have been increasing in recent years and the current prices are higher than for any previous year. Wholesale prices of farm machinery f.o.b. factory were only 13 percent above the prewar average prices in 1946, but 28 percent above in 1947 and 45 percent in 1948. The ratio of prices of farm products to prices of farm machinery will be less favorable to farmers in 1949 than in the last several years and may tend toward a lower volume of purchases. Feed prices, and costs of keeping workstock, are lower than in recent years. This also may slow the shift toward mechanical power in some areas.

For more than a decade, purchases of farm machinery have been large, and, in most of these years, prices of farm machinery have been low compared with prices of farm products, wage rates, feed prices and costs of keeping workstock. Farmers have bought large numbers of tractors and machines, and have increased tremendously the mechanization of their farms. There were about 3,150,000 tractors on farms January 1, 1948; an increase of more than 150 percent over the prewar average (table 2). A rough estimate of the number of tractors on farms January 1, 1949 would be about 3.5 million. The volume of machinery other than tractors increased about as much from prewar as did that of tractors, and there were substantial increases in numbers of farm motor trucks and automobiles. With the large purchases of farm machinery during 1948, it appears that the increase in the amount of machinery on farms from January 1, 1948 to January 1, 1949 was greater than for any previous year.

Along with the increased use of mechanical power on farms, numbers of horses and mules and the use of animal power have declined markedly. On January 1, 1949, numbers of horses and mules of all ages were only 53 percent of their prewar average. The size of the colt crop has declined each year since 1941. In 1948, farmers raised only 27 percent as many colts as were raised annually in the prewar period. Lower feed prices, lower farm prices and lower farm incomes may tend to reduce the rate of decline in horse and mule numbers but the current colt crop is too small to sustain the present horse and mule population. A further decline in numbers of horses and mules is in prospect.

## Feed

Stocks of feed grains on January 1 were the largest on record, both in total and in relation to the number of grain consuming livestock. The number of chickens and turkeys to be raised in 1949 and the spring pig crop are expected to be larger than a year ago and the feeding rate per

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-48
(Index numbers 1935-39=100)

| Year or period | Number on farms, January 1 1/ | | | | | | Volume on farms January 1 2/ | | Gross farm income calendar year 3/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules, all ages | Work stock 3-years old and over | Colts under 1-year of age | Tractors | Auto-mobiles | Motor trucks | All machinery and equipment other than tractors and motor vehicles | All farm power, (including work animals) machines and equipment | | |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 119 | 107 | 106 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 126 | 111 | 133 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 140 | 117 | 178 | 148 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 156 | 122 | 221 | 179 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 160 | 123 | 232 | 182 |
| 1945 | 76 | 77 | 54 | 195 | 107 | 153 | 175 | 128 | 244 | 188 |
| 1946 | 70 | 72 | 41 | 208 | 107 | 159 | 194 | 132 | 280 | 217 |
| 1947 | 64 | 66 | 35 | 225 | 116 | 178 | 215 | 141 | 333 | 259 |
| 1948 | 58 | 61 | 31 | 253 | 127 | 197 | 248 | 154 | 341 | 267 |
| 1949 4/ | 53 | 55 | 27 | | | | | | | |

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1/ The 1935-39 average was for horses and mules all ages, 15,750,000 head; for work stock 13,700,000 head; for colts 744,000 head; for tractors 1,244,000; for automobiles 3,896,000; and there were 973,000 motor trucks.
2/ In terms of 1935-39 prices. 3/ Includes government payments. 4/ Preliminary.

head of livestock is currently heavy. From 10 to 15 percent more grain and other concentrates will be fed in the 1948-49 season than a year earlier. Nevertheless the carry-over of feed grains at the end of the season is expected to be the largest on record. If an average or larger crop of feed grains is harvested this year, supplies also will be large for the 1949-50 feeding season.

Feed-livestock price relationships now are quite different from a year ago. Livestock and livestock product prices are still relatively high although not quite as high as a year ago but feed prices in March were down more than a third from a year earlier (table 3). The ratio of livestock prices to feed prices is therefore very favorable for heavy feeding of most kinds of livestock. It is expected that the relationship will continue favorable for several months, even though grain prices may rise seasonally this spring. The only ratio that is below average for this time of year is the butterfat-feed price ratio. The ratios of milk and chickens to feed are average or a little above and that of hogs and steers much above average.

Hogs probably will continue to be marketed at heavy weights even though lard is a third lower in price than a year ago. With hogs at $20 and corn $1.25 a bushel a farmer can put 50 pounds of gain on a 225 pound hog in a month and sell it for $1.00 less per hundred pounds ($19.00) and still break even.

Milk cows will continue to be fed grain heavily since the decline in prices of milk in most areas has been less than the decline in the cost of feed. The cost of 100 pounds of concentrates fed to milk cows in March in milk selling areas was $3.24 compared with $4.26 a year ago. In cream selling areas the cost was $2.75 compared with $3.94. In most of the milk selling areas 70 to 80 pounds of milk will now pay for 100 pounds of grain and other concentrates fed to milk cows. Under these circumstances it generally will pay to feed good cows at the rate of one pound of grain for each 2½ to 2 3/4 pounds of milk produced or even a little heavier if the cows are not getting all the hay or other roughage they can eat. This applies to feeding on pasture as well. It seems probable that feeding grain on pasture this summer will pay well especially after the first four to six weeks of the pasture season is past. In the North this is often the time when pastures dry up and milk production falls off. In the cream selling areas it is not quite as favorable for heavy grain feeding.

The cost of the poultry ration in March was down 25 percent from a year ago while the average price of eggs was down less than 5 percent and the price of live chickens was up over 10 percent. The cost of high protein feeds is lower now than a year ago and the decline has been more than that of livestock prices but not quite as much as grain. One hundred pounds of high protein feeds when fed to balance the ration usually will replace from 150 to 250 pounds of grain or more depending on the kind of livestock to which it is fed. Soybean meal in Iowa in March was a little less than twice the price of corn.

Table 3.- Prices of livestock and feed, 1927-49
(Index numbers 1935-39=100)

| Year | | Livestock and livestock product prices 1/ | Feed grains and hay prices 1/ | Ratio of livestock prices to feed prices |
|---|---|---|---|---|
| 1927 | | 127 | 121 | 105 |
| 1928 | | 136 | 130 | 105 |
| 1929 | | 138 | 126 | 110 |
| 1930 | | 117 | 113 | 104 |
| 1931 | | 85 | 78 | 109 |
| 1932 | | 63 | 51 | 124 |
| 1933 | | 62 | 60 | 103 |
| 1934 | | 72 | 100 | 72 |
| 1935 | | 98 | 113 | 87 |
| 1936 | | 103 | 107 | 96 |
| 1937 | | 109 | 132 | 83 |
| 1938 | | 97 | 75 | 129 |
| 1939 | | 93 | 73 | 127 |
| 1940 | | 96 | 86 | 112 |
| 1941 | | 120 | 94 | 123 |
| 1942 | | 148 | 117 | 126 |
| 1943 | | 172 | 155 | 111 |
| 1944 | | 166 | 175 | 95 |
| 1945 | | 174 | 170 | 102 |
| 1946 | | 206 | 206 | 100 |
| 1947 | | 251 | 260 | 97 |
| 1948 | Jan. | 280 | 335 | 84 |
| | Feb. | 256 | 275 | 93 |
| | Mar. | 258 | 300 | 86 |
| | Apr. | 260 | 307 | 85 |
| | May | 264 | 297 | 89 |
| | June | 279 | 293 | 95 |
| | July | 294 | 270 | 109 |
| | Aug. | 294 | 248 | 119 |
| | Sept. | 294 | 235 | 125 |
| | Oct. | 277 | 203 | 136 |
| | Nov. | 268 | 191 | 140 |
| | Dec. | 262 | 194 | 135 |
| 1948 | | 274 | 263 | 104 |
| 1949 | Jan. | 253 | 197 | 128 |
| | Feb. | 240 | 182 | 132 |
| | Mar. | 246 | 188 | 131 |

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1/ Calendar year. The factors for converting index numbers from August 1909-July 1914=100 to 1935-39=100 are: livestock and livestock products, 116.6; feed grains and hay, 94.8.

## Seeds

In general, the cost of field seeds will be somewhat lower in 1949 than in 1948. Retail prices of 18 out of 30 important field seeds showed some decline in March compared with a year ago. All seed grains, seed potatoes, red clover, alsike clover and lespedeza were priced lower.

Exceptions to this downward trend, however, are most spring-sown perennial grass seeds, alfalfa, sweet clover and white clover. To head the higher priced list, timothy and redtop have more than doubled in price since last spring mostly as a result of last year's small crops (table 4).

Table 4.- Retail seed prices, March 15, United States
Index numbers (1943-47=100)

| Item | March 15 | |
|---|---|---|
| | 1948 | 1949 |
| Alfalfa, common | 86 | 128 |
| Alfalfa, improved varieties | 98 | 130 |
| Clover, red | 151 | 132 |
| Clover, alsike | 127 | 103 |
| Clover, sweet | 117 | 134 |
| Clover, white | 83 | 107 |
| Clover, Ladino | 132 | 121 |
| Lespedeza, Korean | 141 | 102 |
| Lespedeza, Kobe | 143 | 103 |
| Lespedeza, sericea | 112 | 102 |
| Timothy | 98 | 243 |
| Redtop | 132 | 332 |
| Bluegrass, Kentucky | 88 | 138 |
| Orchard grass | 63 | 97 |
| Ryegrass, common | 105 | 125 |
| Brome, smooth | 109 | 199 |
| Wheatgrass, crested | 197 | 294 |
| Sudan grass | 121 | 111 |
| Millet, German | 141 | 122 |
| Millet, Hungarian | 126 | 113 |
| Sorgo, amber | 154 | 101 |
| Sorgo, orange | 154 | 88 |
| Rape | 119 | 103 |
| Vetch, hairy | 141 | 149 |
| Seed potatoes | 115 | 106 |
| Seed corn, hybrid | 129 | 122 |
| Seed corn, open pollinated | 136 | 122 |
| Seed wheat (Spring) | 154 | 134 |
| Seed oats | 191 | 119 |
| Seed barley | 181 | 129 |

The effect of these new seed prices on farm production costs will vary by region and by type of farm. Consider, for example, the case of a New York dairyman who planted 8 acres of corn, 8 acres of oats, 4 acres of alfalfa and 8 acres of mixed hay in 1948. He bought and used 2 bushels of seed corn, 20 bushels of seed oats, 48 pounds of alfalfa, 32 pounds of red clover, 16 pounds of alsike clover and 72 pounds of timothy at a total cost of $134.46. If he follows the same program in 1949 his seed bill will be $135.85 at present prices or about what he paid for seed last year. The increased costs of grass and legume seeds, in his case, are nearly offset by the reduced cost of seed grains. Operators of most other types of farms, however, may expect a net reduction in their seed costs this year but not enough to reduce their total production costs substantially.

## Fertilizer

Farmers paid approximately 14 percent more per ton for fertilizer in 1948 than in 1947. The increase for 1947 over 1946 was 12 percent. This spring fertilizer prices are slightly higher than a year ago. From 1947 to 1948, fertilizer costs to farmers increased a little more than did prices received by farmers. This is the first time since the prewar years that these costs rose more than prices received. From 1935-39 through 1947, prices received by farmers rose more each year than did prices paid by farmers for fertilizer.

However, this "leveling off" in the price advantage of farm products relative to fertilizer, is not the only basis for farmers to plan their use of fertilizer for the year ahead. The important thing is to select the right fertilizers and use them in quantities that will give greatest returns. For some types of fertilizers, including both phosphate and potash, there is not only the question of the most profitable rate for the crop on which they are applied directly, but also on the value of the carry-over effect on crops that follow. For example, these fertilizers, when used to promote good stands of grasses and legumes, contribute indirectly to increasing future yields of all crops grown throughout a rotation.

Other types of fertilizers, particularly nitrogen, give all of their returns to the crop on which it is directly applied. For these, the question of how much to use is determined by: (1) the cost of the fertilizer, (2) cost of applying the fertilizer, (3) the value of the additional product received from different rates of applying fertilizer, and (4) the cost of harvesting the additional yield.

For example, suppose the cost of 50 pounds of fertilizer is equal to the expected value of 2 bushels of corn and that the cost of application is equal to 0.5 bushel and the cost of harvesting an extra 2 bushels is equal to 0.2 bushel, it would be necessary to obtain an increase of at least 2.7 bushels per acre in order to cover direct costs of an additional application of 50 pounds of fertilizer.

The next step is to estimate the additional yield that can be expected from applying 50 pounds more fertilizer. This depends on climatic and soil conditions, including other current and past soil treatments, cropping practices, inherent yielding ability of the crop variety, effectiveness of insect and disease control, etc. Generally speaking, the response per unit of fertilizer diminishes with each additional application. The farmer needs to draw on his own experience, and on research information, in order to estimate the response he can expect from each additional application of fertilizer.

Analysis of one set of results on a sandy soil of low fertility indicated that with an application of 315 pounds of 20 percent straight nitrogen fertilizer the increase in yield from the last 50 pounds was 2.7 bushels. Under these conditions it would pay to apply up to 315 pounds if 2 bushels of corn are equal in value to 50 pounds of fertilizer and 0.7 bushel will cover the cost of applying the extra 50 pounds of fertilizer and the harvesting of the extra yield.

Under the same conditions, if fertilizer is cheaper relative to the expected price of corn so that only 1.5 bushels equal the value of 50 pounds of fertilizer it would pay to apply up to 375 pounds. 1/

---

1/

| Corn equal in value to | | Increase in yield necessary |
|---|---|---|
| 50 pounds of fertilizer 1/ | Cost of application and of harvesting quantities shown in column 1 2/ | to break even on 50 pound application, at two different corn-fertilizer price relationships (column 1) |
| 1 | 2 | 3 |
| (Bushels) | (Bushels) | (Bushels) |
| 2.0 | 0.70 | 2.70 |
| 1.5 | 0.65 | 2.15 |

1/ Obtained by dividing the cost of 50 pounds of fertilizer by the expected price per bushel of corn. The table could include any number of the many possible crop-fertilizer price relationships. At any given price of the crop, each line downward in this column would represent a lower cost of fertilizer.

2/ Assumes that 0.5 bushel of corn is required to cover the cost of application, and 0.1 bushel to cover the cost of harvesting each extra bushel of yield. These costs in terms of bushels are directly influenced by the expected price of corn. If fertilizer is applied at no extra cost, such as by means of attachment to planter or cultivator, the necessary additional yield to break even would be correspondingly reduced. In any event, however, some extra time is required to fill the fertilizer hopper, etc.

After a peak in farm prices has been passed, many farm costs remain relatively high, or decline more slowly than prices of farm products. The choice of alternative cost items is especially important during such periods. Fertilizer, when properly used gives increases in yields with little additional labor cost. It also provides a means of increasing the size of business on the same acreage. Such a course is more desirable than attempting to build up total returns through extending operations in ways that require additional permanent investments during periods of declining purchasing power.

Fertilizers are still in short supply relative to what farmers would use, if available, at present price relationships. It is estimated that the deficit of fertilizers for 1948 was about two-thirds as great as that for 1947. Fertilizer supplies (plant nutrients) made available and used by farmers in 1948 were more than 2.5 times the average consumption in 1935-39, and well above that for any previous year.

## Building Materials, Supplies and Containers

Supplies of these materials have improved during 1948. The trend to moderately lower prices and greater availability for most items is expected to continue in 1949.

Lumber prices reached an all-time high in August 1948, after which they began to decline and were about 6 percent lower by January 1949. Prices in 1949 are expected to average 5-10 percent lower than those in 1948. Largely as a result of the price change, total production of lumber in 1949 is estimated to be about 4 percent less than the relatively high levels of 1947 and 1948. Though the lumber production rate slowed in the latter half of 1948, stocks have continued to rise and are now substantially above those of a year ago. The lower grades of lumber have shown the greatest price decline and the largest increase in stocks. These are the grades most important for farm construction.

Production of all steel products in 1948 exceeded that in 1947, and so far in 1949 the production rate is about 5 percent higher than in 1948. However, some steel items of importance to farmers are still in short supply. Nails and staples are being produced at a record rate. Only limited areas report short supplies of them. The supply of galvanized sheet metal is limited because of the shortage of both steel sheet and zinc. Little change in availability is expected in the next few months. Aluminum sheet which is becoming more important in farm buildings also remains in short supply. Pipe production continues to increase, but demand still exceeds supply for black and galvanized pipe of the sizes most used by farmers. Metal lath supplies are adequate now but some shortage may be expected when spring building gets under way.

The supply of farm fencing has improved and more nearly meets demands than at any time since the beginning of the war. Cement production in 1948 exceeded the production in 1947 by 11 percent. Consumption also is higher than in 1947. Indications are that supplies of cement in 1949 will be adequate to meet the demands.

Production of bale tie decreased in the fourth quarter of 1948 to about one-half of capacity, indicating that any reasonable demand could be met easily. The supply of baler twine and binder twine is expected to be sufficient to meet current demands.

Containers and packaging materials are expected to be readily available, at lowered prices. Production of wooden crates and boxes in 1948 was 15 percent below the production in 1947; probably a response to lower demands and prices. No shortage is expected in 1949. New and used burlap bags have been readily available for some time. The Indian Government granted a quota of 150,000 tons of jute goods for export to the United States in the first half of 1949. This was the full amount requested by our Government.

Trade sources also indicate ample supplies of paper and mesh bags. Prices of all grades of bags, paper board, and boxing are being reduced to meet increased competition. Tin cans are expected to be available in sufficient quantities to meet the demands for a normal food pack. According to the best information now available, no shortages of packing materials will hamper agricultural production in 1949. Prices of most of these items are expected to remain near present levels but with some tendency to decline on some items.

## Insecticides and Fungicides

Adequate supplies of insecticides and fungicides are expected to be available to protect crops during the 1949 season. In addition, many new types of insecticide formulations will be available. They will include several recently developed insecticidal chemicals--such as DDT, benzene hexachloride, toxaphene, chlordane, parathion, methoxychlor, and others--as well as supplies of well known insecticides like lead arsenate, calcium arsenate, cryollite, and those containing rotenone, nicotine, and pyrethrum.

Local availability of supplies of all of the various kinds will depend to a considerable extent on how well farmers make their needs known. If farmers will place their orders promptly with their suppliers for the kind and approximate quantities of insecticides and fungicides they plan to use, appreciable shortages of most of the various kinds of material are not likely. In the absence of current understanding as to farmer preferences, it is difficult to appraise with any accuracy the specific kinds of insecticides the farmer may desire to use. Some insecticides such as those containing nicotine, rotenone, and pyrethrum may be in close balance with grower use. There is little reason to believe there will be any appreciable price modifications as the season develops.

## Farm Land Values and Rentals

The cost of buying and equipping a farm of adequate size is at a record high. The average value of farm land in the country as a whole last November was the highest on record; about 4 percent higher than in 1920. In the East South Central and Pacific States, land values averaged about a third higher than during the 1920 peak. Values were below the 1920 level in only 12 States, concentrated mainly in the western Corn Belt and Northern Great Plains.

After advancing at an average rate of 1 percent a month from 1943 to 1947, the rate of increase was somewhat slower during 1948. Land values in the country as a whole advanced about 8 percent during the year ending last November. This brought the national index to 113 percent above the 1935-39 average. Land values in only two geographic divisions--New England and Pacific--were less than double the prewar level (table 5). The largest increases during the year ending last November, ranging from 15 to 17 percent, occurred in South Dakota, Wyoming, Nebraska, Kansas, Oklahoma and Arkansas. In the Corn Belt and in most of the Southeastern States, however, the increases ranged close to the national average of 8 percent.

Table 5.- Farm real estate: Index numbers of estimated average value per acre by geographic divisions, 1920 and 1948, with selected comparisons 1/

| Geographic divisions | Index numbers (1935-39-100) | | | Increase | | | Ratio |
|---|---|---|---|---|---|---|---|
| | 1920 | 1948 March | 1948 Nov. | Mar. 1941 to Nov. 1948 | Nov. 1947 to Nov. 1948 | Mar. 1948 to Nov. 1948 | Nov. 1948 to 1920 |
| | | | | Percent | Percent | Percent | Percent |
| New England | 133 | 151 | 157 | 55 | 5 | 4 | 118 |
| Middle Atlantic | 154 | 171 | 178 | 73 | 7 | 4 | 116 |
| East North Central | 217 | 217 | 225 | 110 | 9 | 4 | 104 |
| West North Central | 265 | 194 | 202 | 117 | 12 | 4 | 76 |
| South Atlantic | 196 | 220 | 228 | 111 | 8 | 4 | 116 |
| East South Central | 197 | 253 | 260 | 128 | 6 | 3 | 132 |
| West South Central | 186 | 200 | 216 | 108 | 14 | 8 | 116 |
| Mountain | 204 | 218 | 232 | 121 | 8 | 6 | 114 |
| Pacific | 146 | 197 | 196 | 92 | -2 | -1 | 134 |
| United States | 205 | 205 | 213 | 107 | 8 | 4 | 104 |

1/ Farm land with improvements as of March 1, except where otherwise indicated.

Increases occurred during the March-November period of 1948 in all States except California and Florida. Most of the States east of the Mississippi showed increases near the national average of 4 percent. In the West South Central and Mountain States, however, land values increased 8 and 6 percent, respectively.

Preliminary estimates for March 1949 show the first general tendency for land values to level off since before the war. Higher production costs and lower net farm incomes for 1948 apparently have checked further advances in some States, and have resulted in small declines from the November level in others.

More than half of all sales during 1948 were cash deals, and down payments on credit-financed sales averaged slightly over two-fifths of the purchase price. Mortgage credit in recent years has been supplied mainly by individuals and commercial banks.

Farm land continued to yield a high rate of return in 1948, although slightly less than the previous year. Cash rents per acre in 1948 were about 12 percent higher than in 1947, but this increase was at least partly offset by higher taxes and building costs. The value of the gross rent paid for land rented on a crop-share basis was about 4 percent less than in 1947, largely as a result of lower prices for grain crops. Total net rents, including both cash and share, probably were down about 4 percent from the previous year, but were still more than one and one-half times as high as in 1940.

## Interest, Taxes, and Insurance

Interest payments - Aggregate interest payments on farm real estate loans are expected to rise further in 1949. Preliminary estimates for 1948 indicate that payments due for interest on debts increased about 4 percent compared with a 2 percent rise in 1947. It is expected that interest payments on farm-mortgage debt in 1949 may rise as much or even more than in 1948. Such charges, however, still would be materially lower than after World War I, when farm-mortgage debt reached a peak more than double current levels.

While interest rates on new loans have strengthened somewhat in recent months, the volume of such loans in relation to loans outstanding has not been sufficient to greatly affect total interest charges. The main factor in the rise of interest charges has been the increase in farm-mortgage debt. This has risen about 10 percent since January 1, 1946 when it reached a 32-year low.

The total amount of interest paid by farmers on non-real-estate debt during 1948 was substantially higher than that paid during the war and prewar years. It will continue relatively high during 1949 and may show some increase over 1948. The increase since the war resulted primarily from a greater volume of borrowing by farmers. The volume of non-real-estate loans to farmers held by the principal institutional lenders during 1948 averaged over 20 percent greater than in 1947 and about 50 percent greater than for the period 1941-45. Individual loans are larger and there are indications that more farmers are borrowing. A slight increase in interest rates in the past year or two also has contributed to the higher interest payments. In contrast to long-term mortgage loans these short-term loans quickly reflect any change in interest rates.

Taxes - Preliminary reports for the country as a whole indicate that property-tax payments which will become a part of farm-production costs in 1949 will be somewhat higher than those for the preceding year. This would be the fifth consecutive increase in farm-property-tax levies.

The increase in the 1948 levies, which are payable late in 1948 or early in 1949, may not equal the 15 percent rise shown in the last yearly survey. There are continuing pressures upon the revenues of local governments (the property tax being a principal source), but very recently many of the States have granted broader taxing powers to local jurisdictions.

Insurance - Fire (and lightning) insurance on farm property increased about 11 percent in 1948, compared with about 10 percent in 1947 and 7 percent in 1946. The continued increase in farm-property valuations influenced some farmers to increase their policies and caused others to take out insurance. The premium and assessment rates charged farmers have not changed much in recent years, so that the aggregate insurance costs of farmers have increased in about the same proportion as the amount of insurance in force.

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# THE Farm Cost SITUATION

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## GENERAL SITUATION

Farm cost rates have remained relatively high during 1949, and prices for most cost items probably will continue high in 1950. Farm cost rates moved up continuously from 1939 to 1948. The index of prices farmers paid for goods and services used in production reached an all time high in 1948. It was 201 (1935-39=100) compared with 184 in 1947 and 151 in 1946. But up to 1948 prices received for farm products increased at a more rapid rate than did cost rates. In 1948 the index (1935-39=100) of prices of farm products was 268 compared with 260 in 1947 and 218 in 1946.

During the first 9 months of 1949 the index of prices paid by farmers for goods and services used in production averaged 195 compared with 202 for the same period in 1948. The index of prices received for farm products, however, averaged 239 during the first 9 months of 1949 compared with 273 for the same period a year earlier. In other words, from 1948 to

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Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39=100)

| Year | All commodities 1/ | Farm machinery | Building material other than house | Equipment and supplies 2/ | Feed | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|
| 1910 | 77 | 66 | 68 | 91 | 86 | 99 | - | 82 |
| 1911 | 81 | 66 | 70 | 90 | 99 | 99 |  | 83 |
| 1912 | 77 | 66 | 70 | 90 | 84 | 100 | 66 | 86 |
| 1913 | 80 | 66 | 68 | 90 | 99 | 102 | 63 | 88 |
| 1914 | 78 | 66 | 63 | 89 | 94 | 100 | 64 | 86 |
| 1915 | 82 | 68 | 69 | 95 | 93 | 112 | 77 | 87 |
| 1916 | 98 | 70 | 79 | 116 | 120 | 120 | 92 | 96 |
| 1917 | 119 | 80 | 93 | 141 | 170 | 137 | 96 | 119 |
| 1918 | 137 | 102 | 109 | 163 | 179 | 170 | 123 | 150 |
| 1919 | 151 | 105 | 128 | 162 | 195 | 182 | 181 | 175 |
| 1920 | 137 | 109 | 139 | 170 | 127 | 186 | 98 | 205 |
| 1921 | 111 | 105 | 105 | 137 | 90 | 156 | 86 | 131 |
| 1922 | 109 | 93 | 107 | 126 | 114 | 129 | 84 | 129 |
| 1923 | 111 | 97 | 109 | 123 | 124 | 126 | 92 | 144 |
| 1924 | 112 | 101 | 109 | 120 | 131 | 120 | 97 | 147 |
| 1925 | 116 | 101 | 111 | 126 | 131 | 129 | 111 | 149 |
| 1926 | 115 | 101 | 109 | 130 | 127 | 126 | 138 | 152 |
| 1927 | 113 | 101 | 108 | 127 | 128 | 121 | 127 | 152 |
| 1928 | 117 | 101 | 107 | 124 | 137 | 131 | 115 | 152 |
| 1929 | 116 | 100 | 107 | 123 | 134 | 130 | 119 | 153 |
| 1930 | 111 | 100 | 105 | 118 | 122 | 126 | 112 | 142 |
| 1931 | 97 | 99 | 94 | 104 | 86 | 115 | 98 | 110 |
| 1932 | 86 | 93 | 85 | 96 | 64 | 99 | 66 | 81 |
| 1933 | 85 | 91 | 87 | 93 | 71 | 96 | 61 | 72 |
| 1934 | 97 | 95 | 99 | 98 | 98 | 104 | 90 | 81 |
| 1935 | 100 | 96 | 97 | 97 | 105 | 102 | 99 | 88 |
| 1936 | 98 | 98 | 98 | 99 | 104 | 96 | 91 | 94 |
| 1937 | 107 | 101 | 105 | 102 | 121 | 102 | 124 | 107 |
| 1938 | 99 | 104 | 100 | 103 | 85 | 100 | 102 | 106 |
| 1939 | 96 | 101 | 100 | 99 | 85 | 100 | 84 | 105 |
| 1940 | 98 | 100 | 101 | 99 | 94 | 97 | 84 | 107 |
| 1941 | 103 | 103 | 109 | 104 | 101 | 100 | 80 | 131 |
| 1942 | 117 | 108 | 120 | 114 | 125 | 111 | 123 | 171 |
| 1943 | 128 | 111 | 128 | 121 | 150 | 120 | 156 | 224 |
| 1944 | 136 | 114 | 138 | 126 | 165 | 121 | 175 | 268 |
| 1945 | 137 | 116 | 141 | 128 | 163 | 121 | 181 | 297 |
| 1946 | 151 | 120 | 158 | 132 | 194 | 124 | 190 | 321 |
| 1947 | 184 | 137 | 222 | 150 | 235 | 138 | 230 | 346 |
| 1948 | 201 | 160 | 237 | 168 | 246 | 152 | 224 | 367 |
| Jan. | 204 | - | - | - | 291 | - | - | 360 |
| Feb. | 201 | - | - | - | 264 | - | 219 | - |
| Mar. | 201 | 148 | 235 | 163 | 267 | - | 221 |  |
| Apr. | 203 | - | - | - | 271 | 150 | 220 | 357 |
| May | 204 | - | - | - | 269 | - | 219 | - |
| June | 204 | 159 | 237 | 168 | 266 | - | - | - |
| July | 203 | - | -- | - | 254 | - | - | 366 |
| Aug. | 200 | - | - | - | 231 | - | - | - |
| Sept. | 199 | 164 | 239 | 170 | 220 | 155 | 230 | - |
| Oct. | 196 | - | - | - | 205 | - | 236 | 363 |
| Nov. | 196 | - | - | - | 202 | - | - | - |
| Dec. | 197 | 168 | 236 | 172 | 206 | - | - | - |
| 1949 |  |  |  |  |  |  |  |  |
| Jan. | 197 | - | - | - | 206 | - | - | 372 |
| Feb. | 196 | - | - | - | 196 | - | 261 | - |
| Mar. | 196 | 172 | 230 | 173 | 198 | - | 257 | - |
| Apr. | 197 | - | - | - | 203 | 158 | 257 | 353 |
| May | 197 | - | - | - | 200 | - | 257 | - |
| June | 195 | 179 | 224 | 174 | 191 | - | - | - |
| July | 194 | - | - | - | 193 | - | - | 361 |
| Aug. | 194 | - | - | - | 192 | - | - | - |
| Sept. | 193 |  |  |  | 187 | 156 | 254 |  |

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1/ Excluding wages.

2/ Based on prices paid by farmers for 16 items including binder twine, lead arsenate, milk pails, pitchforks, gasoline for autos and trucks, motor oil and tires, and other similar items used on farms for production.

Note: For a list of items included in this table see "Agricultural Prices" Bureau of Agricultural Economics, April 29, 1946.

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1949 the index of prices of farm products declined 34 points compared with a decline of only 7 points for cost rates. Further declines are expected in 1950, with prices received declining again somewhat more than those paid.

Prices of farm machinery, seed, and equipment and supplies continued to rise during 1949. Prices of fertilizer averaged higher in 1949 than in 1948, but farm wage rates and prices paid for building materials, and feed declined. The index of prices of crops and of livestock and livestock products both declined and in about the same proportion. Lower prices for roughages and grains mean lower gross returns to the farmer who sells these crops, but lower cash costs to the farmer who must buy.

Lower prices of farm products and comparatively high cost rates with resulting high operating costs in 1949 are definitely lowering farmers' net returns. For the country as a whole, however, operators' net returns are expected to average around 3 times the prewar. The extent of the decline will depend much upon the type of farm and the area. Some dairy farmers in the Northeast are faced with high feed costs because of the drought this summer. It is estimated that in 1949 net cash returns on commercial family-operated dairy farms in this area will average about $700 less than in 1948. Gross cash receipts will be down nearly $1,000 mostly because of a lower price for milk. Cash expenditures in 1949 will be slightly lower than in 1948. Crop farmers, particularly grain farmers, will have lower net returns because of lower crop yields and grain prices and continued high costs of operation, maintenance and depreciation. Net farm returns on commercial family-operated winter wheat farms will be around $2500 less in 1949 than in 1948. The 1949 estimated returns on both dairy and winter wheat farms, however, will be considerably higher than prewar returns.

Farm wage rates are averaging slightly less in 1949 than a year ago. This is the first decline in average wage rates since the big increases in the war and postwar years. The strongest tendency toward leveling off of farm wage rates has been in the Pacific Coast region and in the important industrial regions. With the leveling off of industrial employment, the supply of workers available in 1950 is expected to be slightly greater and wage rates slightly lower than in 1949.

Prices of farm machinery in 1949 were the highest on record. Plant capacity of the American farm machinery industry is now larger than ever before and dealers' stocks on January 1, 1950 of both new and used farm machines will be larger than for any year since 1941. The end of the sellers' market seems to have been reached and dealers are offering relatively better prices for "trade ins" than they have in recent years.

Total costs of using mechanical power and equipment on farms are higher than ever before. Fuels, particularly gasoline, the leading tractor fuel, are higher than before and costs of repairs and replacement also have reached new high levels.

The total feed supply (concentrates and hay excluding pasture) for the 1949-50 season is the largest on record; 1/8 larger than the 10-year average (1939-48). The supply of feed grains is mainly responsible for the record high total because hay and other concentrates are about the same as a year earlier. The supply of all feed concentrates for the season 1949-50 totaled 180 million tons compared with 169 million tons a year ago.

The number of grain consuming livestock to be fed this season is expected to be 2 or 3 percent larger than the 161 million animal units fed in 1948-49. The index of feed concentrates supply per animal unit is nearly a third higher than in 1935-39, and the highest on record. The index of livestock and livestock product prices has come down about 20 percent from a high point reached in August a year ago, but feed costs have declined even more. It should pay to feed livestock heavily this fall and winter.

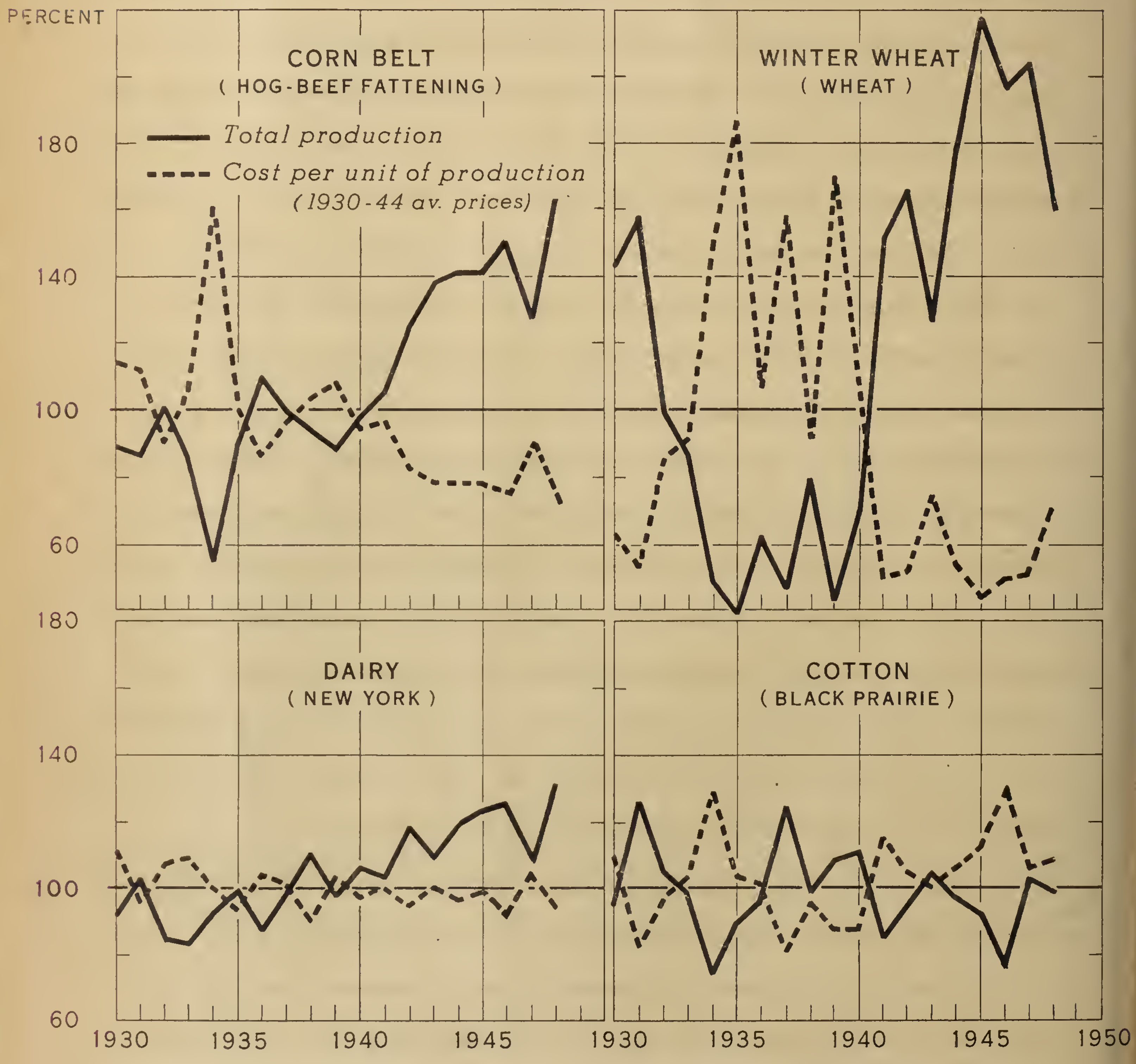
The present cost of many important field seeds is higher than a year ago and much higher than the 1943-47 average. Supplies of grass seeds are particularly short this year and prices next spring are expected to be higher than a year ago. Clover or alfalfa mixed hay has considerably more feed value per ton and per acre than grass hay and is well worth the additional cost of seed where soil and climate are suitable for its production.

The price of fertilizer has risen less rapidly than most cost items but has continued to increase year after year since 1940. In 1949 it averaged about 4 percent higher than in 1948. The September price was slightly lower than in April, and not much change is expected in prices paid by farmers in 1950. There have been reductions recently in wholesale prices of some nitrogen materials, but prices of potash and phosphates are about unchanged. Supplies of all fertilizer materials probably will be larger in 1950. The industry has capacity to supply 15 to 25 percent more nitrogen, 10 to 15 percent more phosphate and about 10 percent more potash. Except for some local tight spots, supplies will be adequate to meet expected demands except possibly for potash and perhaps some special mixes. Even so, farmers will profit from continued or expanded use of fertilizer.

Prices of most items of building materials, supplies and containers in 1949 have remained near 1948 levels with slight reductions in a few items. The price of cement is between 4 and 5 percent higher than a year ago, but prices of lumber are down. At the wholesale level, the price of lumber was down about 11 percent from a year ago. Stocks of most items in

## TOTAL PRODUCTION AND COST PER UNIT OF PRODUCTION, FAMILY OPERATED FARMS, BY TYPE, 1930-48

INDEX NUMBERS (1930-44 = 100)



U. S. DEPARTMENT OF AGRICULTURE NEG. 46109 BUREAU OF AGRICULTURAL ECONOMICS hands of dealers have improved and are generally adequate. Indications are that supplies of most items will continue to increase from present levels.

Prices of insecticides and fungicides in 1950 will be about the same as at present. Supplies of these materials are expected to be ample in 1950 to meet normal requirements. However, several localized pest outbreaks appeared in local areas in 1949 and demands for insecticides were considerably above average. Such local shortages may occur again in 1950. Farmers and local dealers, therefore, should make their requirements known to their suppliers as far in advance as possible.

Land values and gross rentals in 1949 declined for the first time in more than a decade, led by greater declines in prices of farm products and in net incomes. Nevertheless, returns to land remained at relatively high levels in 1949. The average rate earned on farm real estate investments in 1949 was considerably higher than the interest rate on farm mortgages and more than could be made on most alternative investments. While farm returns continue high, substantial payments on principal are advisable in order to be in the best possible position if refinancing becomes necessary.

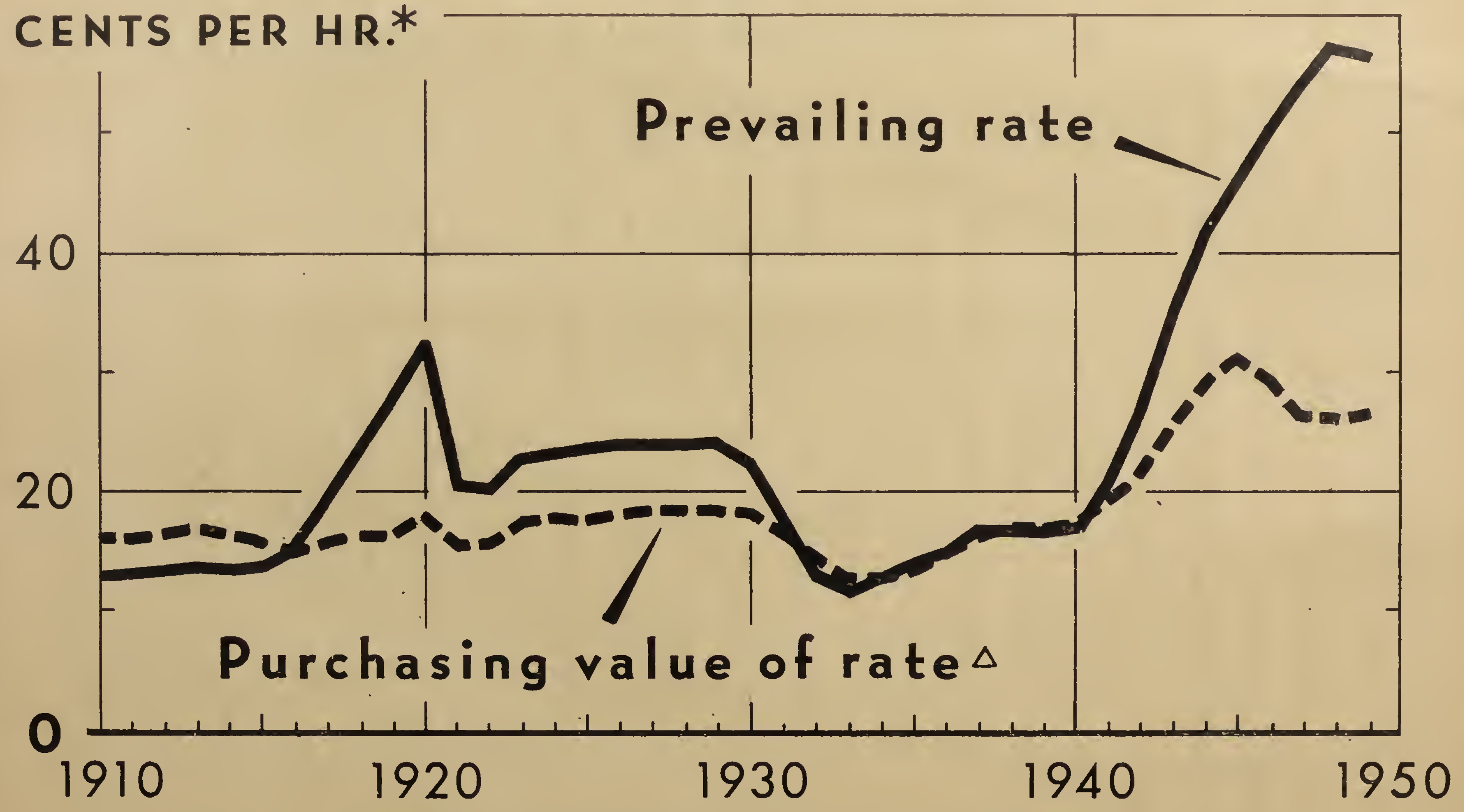
## Farm Labor

Farm wage rates in 1949 are averaging slightly less than last year. This is the first drop in average rates after the great increase of the war and postwar periods. The reduction in wage rates has been greatest in the Pacific Coast region. The reduction from last year's level also has been more marked in regions where industrial production is important than in the more strictly agricultural regions.

An additional decrease in average farm wage rates can be expected in 1950 if the expected decline in farm income materializes. The decrease from 1949 to 1950 probably will exceed the indicated two percent drop from 1948 to 1949 (table 1).

The supply of farm workers in 1949 has been adequate generally to do farm jobs well and on time. An adequate supply is expected to continue

# CASH FARM WAGE RATES



*HOURLY EQUIVALENT OF ALL TYPES OF FARM WAGE RATES
△IN TERMS OF 1935-39 RURAL LIVING COSTS

U. S. DEPARTMENT OF AGRICULTURE NEG. 47384-XX BUREAU OF AGRICULTURAL ECONOMICS during the remainder of the year. Some farmers in the western part of the Cotton Belt where another bumper cotton crop is being gathered may encounter difficulty in obtaining all the experienced cotton pickers they would like to have at the height of the picking season. Mexican Nationals are being imported to help out, and mechanical strippers and pickers are used more in these areas than elsewhere.

Table 1.- Farm wage rates and related data, United States
1935-39 average and 1940-49 inclusive
(Index numbers 1935-39=100)

| Period or year | Farm employment |  |  | Gross farm production 2/ |  | Farm wage rates | Ratio of farm wage rates to |  |
|---|---|---|---|---|---|---|---|---|
|  | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ |  | Production per worker | Gross farm income per worker 4/ |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 108 | 111 | 107 | 96 | 98 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 131 | 112 | 94 |
| 1942 | 95 | 94 | 99 | 123 | 129 | 171 | 133 | 91 |
| 1943 | 94 | 94 | 94 | 120 | 128 | 224 | 175 | 95 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 268 | 199 | 106 |
| 1945 | 90 | 92 | 82 | 123 | 137 | 298 | 218 | 110 |
| 1946 | 92 | 94 | 84 | 126 | 137 | 321 | 234 | 106 |
| 1947 | 93 | 95 | 87 | 121 | 130 | 347 | 267 | 97 |
| 1948 5/ | 92 | 93 | 89 | 131 | 142 | 367 | 258 | 100 |
| 1949 5/ | 89 | 90 | 87 | 127 | 143 | 361 | 252 | 105 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Because of the increase in volume of production and the increase in the price of farm products, the gross farm income per worker has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1949.
5/ Preliminary.

The 1949 production of certain other fall harvested crops is expected to exceed that of last year. There are, for example, over 40 million more bushels of apples and over 440 thousand more tons of sugar beets. No serious shortage of workers to harvest these crops is expected to develop despite larger production. The production of some other crops, such as potatoes in northern areas, probably will be lower than last year, but the supply of harvest labor is expected to be ample.

With the leveling off of industrial employment, the supply of workers available for both seasonal and year-round farm jobs in 1950 is expected to be slightly greater than for this year. With about normal weather and crops, however, the average number of workers employed on farms is expected to continue the slight downward movement of the last two years. Most of the reduction is expected to occur in family workers with little change in the average number of hired workers.

## Farm Power and Machinery

Retail prices of farm machinery in 1949 were the highest on record. Higher prices along with reduced farm incomes this year have resulted in a decline in the volume of farm machinery purchases from the record level of 1948.

Farm income in 1950 is expected to decline again and purchases of farm machinery probably will be somewhat below 1949. Purchases in 1950, however, may still be larger than for any year prior to 1947. Although prices of new machinery in the first half of 1949 were the highest on record, some prices have come down during the last few months. Also with the end of the sellers' market, dealers will tend to offer relatively better prices for "trade ins" than in recent years.

Practically all items of farm machinery were in sufficient supply in 1949, and adequate supplies are in prospect for 1950. Production of farm machinery in 1949 is expected to be somewhat below the record output of 1948. Production of many items has exceeded sales to farmers, and dealers' stocks on January 1, 1950 of both new and used farm machines will be larger than for any year since 1941. Plant capacity of the American farm machinery industry is now larger than ever before.

Exports of farm machinery in 1949 probably will be about the same as in 1948. Exports were larger in the first half of 1949 than for the same months of 1948 but have declined since; reflecting dollar shortages and increased supplies of foreign produced machines.

Numbers of tractors and the total volume of other machinery now on farms are larger than ever before. There were 3.5 million tractors of all types on farms January 1, 1949. Additional purchases during the year have increased this number. For many important machines, such as corn pickers, windrow-pickup balers, combines and forage harvesters the percentage increase in numbers on farms has been even larger in recent years than for tractors. About half of all farms now have tractors but more important, these tractor farms have about 85 percent of the harvested cropland. Also, some farms without tractors hire or obtain by other means the use of tractor power.

Total numbers of horses and mules on farms January 1, 1950 will be less than half the average number on farms during the prewar period 1935-39. Prices paid for horses and mules are now the lowest in years and the low prices are being reflected in smaller colt crops. The colt crop of 1949 probably will be even smaller than the 1948 colt crop of 200,000 head, which was the smallest in more than a century. Cost of keeping workstock in 1949 was lower than in 1947 or 1948, but higher than for any other recent year (table 2).

Table 2.- Horses and mules and tractors on farms and cost of keeping horses and mules and of using farm tractors, United States, 1940-49 1/

(Index numbers 1935-39=100)

| Calendar year or period | Horses and mules on farms, number: all ages January 1 | Colts under 1 year on farms, number January 1 | Horses and mules all ages, value per head, January 1 | Feed cost per head 2/ | Tractors on: farms, number: January 1 | Prices paid by farmers for: New tractors 3/ | Prices paid by farmers for: Gasoline | Prices paid by farmers for: Tires |
|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1940 | 92 | 101 | 90 | 94 | 124 | 94 | 95 | 91 |
| 1941 | 90 | 98 | 81 | 104 | 135 | 99 | 99 | 94 |
| 1942 | 87 | 85 | 78 | 132 | 152 | 104 | 103 | 117 |
| 1943 | 84 | 69 | 95 | 174 | 169 | 104 | 104 | 129 |
| 1944 | 80 | 62 | 98 | 196 | 178 | 107 | 104 | 135 |
| 1945 | 76 | 54 | 86 | 192 | 195 | 109 | 103 | 130 |
| 1946 | 70 | 41 | 80 | 221 | 208 | 122 | 106 | 131 |
| 1947 | 64 | 35 | 84 | 283 | 225 | 136 | 118 | 126 |
| 1948 | 58 | 31 | 79 | 297 | 253 | 152 | 132 | 127 |
| 1949 | 53 | 27 | 72 | 4/235 | 5/ 281 | 6/ 166 | 7/ 134 | 7/ 125 |

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1/ The 1935-39 averages were horses and mules all ages, 15,750,000 head; value per head, $97.68; feed cost per head, $39.34; colts under one year of age 744,000 head; tractors, 1,244,000; prices paid by farmers for new tractors, $1,106; gasoline $0.19; and tires, $12.70. 2/ Based on 25 bushels each of oats and corn and 2 tons of loose hay. 3/ Tractor prices are for medium size (20-29 BHP) wheel tractor equipped with rubber tires.
4/ Average of the first eight months. 5/ Preliminary estimates. 6/ Average prices paid in March.
7/ Average prices paid in March and June.

Numbers of motor trucks and automobiles on farms January 1, 1949 were at peak levels. Supplies of new motor trucks and automobiles were large in 1949 and numbers of automobiles and motor trucks on farms on January 1, 1950 will show a substantial increase over the numbers in 1949. The number of motor trucks on farms has doubled during the past 10 years. During the past 5 years automobiles on farms increased about 25 percent.

Cost of using tractor power in 1949 was higher than for any previous year largely because of higher prices of new tractors and of gasoline; the leading tractor fuel. On the other hand, tire prices in 1949 were the lowest since 1942.

## Feed

The total supply of feed (concentrates and hay excluding pasture) for the 1949-50 season is the largest on record--12½ percent larger than the 1939-48 average. The supply of feed concentrates for the 1949-50 season is also the largest on record, totaling about 180 million tons compared with 169 million tons a year ago. The carryover of old grain is much larger than a year ago, but the 1949 production of feed grain is somewhat smaller. Supplies of high protein feeds per animal unit may be a little smaller than a year ago, but still larger than for most recent years. The supply of mill feeds probably will be considerably smaller than in recent years. The quantity of wheat fed in 1949-50 is expected to be about the same as in 1948-49, and much smaller than in some war years.

The number of grain consuming animal units to be fed in 1949-50 is expected to be 3 or 4 percent larger than the 161 million animal units fed in 1948-49. The index of supply of feed concentrates available for feed in 1949-50 is 51 percent above the 1935-39 period whereas the number of grain consuming animal units to be fed is only 16 percent greater than during 1935-39. 1/ As a result, the index of supply per animal unit is 30 percent higher than in 1935-39, and the highest on record (table 3).

The supply of hay per animal unit is high for the country as a whole although there are prospective shortages in parts of the Northeast and in the Dakotas and Montana due to droughts in those areas.

The average price of corn on September 15 was $1.16 per bushel compared with $1.78 a year earlier. Prices of commercial mixed feeds and nearly all byproduct feeds except soybean meal and the animal protein feeds were lower September 1949 than a year ago, but not down as much as corn. Feed prices may decline somewhat further but the loan and price support programs will tend to limit the extent of declines.

Livestock-feed price ratios on September 15, 1949 were above the 20-year September average for hogs, eggs, turkeys and milk, but below average for chickens and butterfat. The ratios for hogs and eggs were especially favorable for feeding. The index of livestock and livestock product prices has come down about 17 percent from the high point reached a year ago but feed costs have declined even more (table 4). Thus, the ratio is very favorable for converting feed into livestock products and it is expected to

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1/ Feeding years beginning October 1.

Table 3.- Relation of supply of concentrates available for feed to number of livestock 1926-49
(Index numbers 1935-36 to 1939-40 = 100)

| Feeding year | Supply of feed concentrates available for feed 1/ | Animal units of grain consuming livestock fed in year 2/ | Supply of feed per animal unit 3/ |
|---|---|---|---|
| | Percent | Percent | Percent |
| 1926-27 | 105 | 106 | 99 |
| 1927-28 | 103 | 107 | 96 |
| 1928-29 | 106 | 106 | 100 |
| 1929-30 | 103 | 107 | 96 |
| 1930-31 | 96 | 106 | 91 |
| 1931-32 | 106 | 109 | 97 |
| 1932-33 | 119 | 111 | 107 |
| 1933-34 | 98 | 107 | 92 |
| 1934-35 | 68 | 91 | 75 |
| 1935-36 | 97 | 96 | 101 |
| 1936-37 | 74 | 96 | 77 |
| 1937-38 | 101 | 95 | 106 |
| 1938-39 | 111 | 104 | 107 |
| 1939-40 | 116 | 109 | 106 |
| | | | |
| 1940-41 | 120 | 109 | 110 |
| 1941-42 | 128 | 117 | 109 |
| 1942-43 | 148 | 134 | 110 |
| 1943-44 | 141 | 135 | 104 |
| 1944-45 | 132 | 121 | 109 |
| 1945-46 | 131 | 117 | 112 |
| 1946-47 | 130 | 113 | 115 |
| 1947-48 | 111 | 108 | 103 |
| 1948-49 | 140 | 112 | 125 |
| 1949-50 4/ | 151 | 116 | 130 |

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1/ Supply of concentrates year beginning October less quantity used for industry, food, seed, and exports.
2/ Animal units fed in year beginning October.
3/ Column 1 divided by column 2.
4/ Tentative estimate.

Table 4.--Prices of livestock and feed, 1927-49
(Index numbers 1935-39 = 100)

| Year | | Livestock and livestock product prices 1/ | Feed grains and hay prices 1/ | Ratio of livestock prices to feed prices |
|---|---|---|---|---|
| | | Percent | Percent | Percent |
| 1927 | | 127 | 121 | 105 |
| 1928 | | 136 | 130 | 105 |
| 1929 | | 138 | 126 | 110 |
| 1930 | | 117 | 113 | 104 |
| 1931 | | 85 | 78 | 109 |
| 1932 | | 63 | 51 | 124 |
| 1933 | | 62 | 60 | 103 |
| 1934 | | 72 | 100 | 72 |
| 1935 | | 98 | 113 | 87 |
| 1936 | | 103 | 107 | 96 |
| 1937 | | 109 | 132 | 83 |
| 1938 | | 97 | 75 | 129 |
| 1939 | | 93 | 73 | 127 |
| 1940 | | 96 | 86 | 112 |
| 1941 | | 120 | 94 | 123 |
| 1942 | | 148 | 117 | 126 |
| 1943 | | 172 | 155 | 111 |
| 1944 | | 166 | 175 | 95 |
| 1945 | | 174 | 170 | 102 |
| 1946 | | 206 | 206 | 100 |
| 1947 | | 251 | 260 | 97 |
| 1948 | Aug. | 294 | 248 | 119 |
| | Sept. | 294 | 235 | 125 |
| | Oct. | 277 | 203 | 136 |
| | Nov. | 268 | 191 | 140 |
| | Dec. | 262 | 194 | 135 |
| 1948 | | 274 | 263 | 104 |
| 1949 | Jan. | 253 | 197 | 128 |
| | Feb. | 240 | 182 | 132 |
| | Mar. | 246 | 188 | 131 |
| | Apr. | 242 | 188 | 129 |
| | May | 238 | 184 | 129 |
| | June | 238 | 177 | 134 |
| | July | 236 | 180 | 131 |
| | Aug. | 237 | 175 | 135 |
| | Sept. | 244 | 176 | 139 |

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1/ Calendar year. The factors for converting index numbers from August 1909-July 1914 = 100 to 1935-39 = 100 are: livestock and livestock products, 116.6; feed grains and hay, 94.8.

continue favorable even though some livestock prices may decline in the next several months. It should pay to feed livestock heavily this fall and winter.

Dairy cows have been fed a heavy grain ration during the past year and it seems likely that it will pay to continue this practice. At present prices 80 pounds of milk will pay for 100 pounds of average concentrate ration for dairy cows. This is an average figure for the United States. With this feed milk price relation it pays to feed 1 pound of grain to each 2¼ to 3½ pounds of milk depending on the amount of hay available and the kind of cows. There are many areas where the feed-milk price relation is favorable for even heavier feeding. It is advantageous to feed up to the level where the additional milk will just pay for the additional feed used. 2/ In areas where hay supplies are below normal heavier grain feeding will help maintain or increase milk production.

In some of the western Corn Belt States the price of corn is at or near $1.00 per bushel. If it is assumed that a farmer has hogs weighing 225 pounds in December that will sell for $17 per 100 pounds and that the price of corn is $1.00 per bushel, it will take about 4.6 bushels of corn to carry one of these hogs another month and put on 50 pounds of gain. But will it pay to carry the hog to January if the 275 pound hog will sell for $1.00 less or $16 per hundred pounds?

| | |
|---|---|
| Value of 275 pound hog at $16.00 | $44.00 |
| Value of 225 " " at $17.00 | 38.25 |
| Margin for carrying from Dec. to Jan. | 5.75 |

Feed cost 4.6 bushels of corn @ $1.00 = $4.60

$5.75 ÷ $4.60 = $1.25 return per $1.00 of feed cost.

With these assumed prices it will pay because 25 cents will cover other costs. A decline in price of $1.00 per hundred pounds or 6 percent from December to January is more than usually occurs. Feeding hogs to rather heavy weights probably will pay again this winter. However, it will pay to keep closely in touch with market conditions because they can change quickly, particularly with a larger hog crop coming to market.

Cattle being fattened for slaughter will be fed heavily this winter. Laying flocks also will continue to be fed a heavy grain ration. Even with heavy grain feeding for all kinds of livestock during the 1949-50 feeding year the carryover of grain at the end of the year will exceed the large carryover of grain at the end of 1948-49 year by a wide margin.

For several months prices of animal protein feeds have been much higher than normal relative to the price of corn. In times like this substitutions in feeds can be made profitably. Soybean meal, for example, can be substituted to a considerable extent for animal protein feeds for hogs and poultry. The use of cottonseed and linseed meal for livestock to which

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2/ Jennings, Ralph D., and Klein, John W. More Grain for Your Dairy Cows. Vol. 33, No. 2, 1949. Agricultural Situation.

they are suited will tend to keep feed costs down. The place of good legume hay and pastures and grass silage in supplying as much of the protein as possible in livestock rations will increase in importance as a means of keeping cost of protein supplements to a minimum.

One feed that is unusually low in price compared with corn is molasses; especially when it can be handled in car lots. On the average about 8 gallons of molasses sells (in car lots) for about the same as 1 bushel of corn but in recent months 16 or 17 gallons could be bought for the price of a bushel of corn. Feeding tests with different kinds of livestock show a pound of molasses to be worth ½ to 3/4 as much as a pound of corn. It is worth even more where used to induce cattle, sheep or horses to eat low grade roughage that they otherwise would not eat. A gallon of molasses weighs about 12 pounds. Thus assuming that it is worth ½ as much as corn, a gallon of molasses would be worth about 10 cents with corn at $1.00 per bushel.

## Seeds

The present cost of many important field seeds is higher than a year ago and much higher than the 1943-47 average. In some instances it is higher than ever before. Grass seeds in shortest supply are especially high in price. For example, prices that farmers paid for timothy and redtop during the four months from February to May 1949 averaged two and one-half times as high as in the corresponding period of 1948.

Grass seeds are expected to cost even more next spring. Prices paid to timothy-seed growers on August 15 this year were the highest on record for that date and more than twice as high as in 1948.

Although it is still too early to know what the supplies of alfalfa seed will be for seeding in 1950, it is probable that the spread between prices of grass and legume seeds will be proportionately less than usual. There will be a strong tendency among farmers to conserve on the use of grass seeds next spring. Many farmers who have not grown legumes for hay in the past because of the higher cost of seed may use more legume seed and less grass seed next year. Others will reseed fewer acres for hay while still others will sow less seed per acre.

Field surveys indicate that many farmers normally use more seed per acre than is usually recommended. Many use 50 percent more timothy seed (now high in price) per acre than is usually recommended. When the supply of seed was abundant and the price low, this practice was not so costly. About 10 pounds of timothy seed per acre is usually considered adequate when seeded alone in the spring and five pounds when seeded alone in the fall. On many farms, red clover, alsike clover or alfalfa seed may be substituted for some or all of this timothy seed. Clover or alfalfa mixed hay has considerably more feed value per ton and per acre than grass hay and is well worth the additional cost of seed where soil and climatic conditions are suitable for its production.

Supplies of important winter cover crop seeds (Austrian winter peas, vetches, ryegrasses, crimson clover and lupine) are slightly larger than last year but 22 percent below the 1943-47 average. The increase over last year in total supply is due mainly to greatly increased supplies of lupine and crimson clover. These increases, however, are partly offset by considerably reduced supplies of vetches. Austrian winter peas are a little more plentiful than last year but the supply is only about half the 1943-47 average.

Unfavorable weather in seed producing areas together with smaller carryovers of several important seeds account largely for present short supplies. In some areas, winter killing was a major factor. In others, wet weather at harvest time reduced yields while in other parts of the country where grass seeds are normally produced, shortages of hay and pasture resulting from dry weather caused crops originally intended for seed to be used for pasture or hay.

Prices offered to grass-seed growers at harvest time were generally attractive. These favorable prices resulted in many low-yielding acreages being harvested for seed that otherwise would not have been harvested.

## Fertilizer

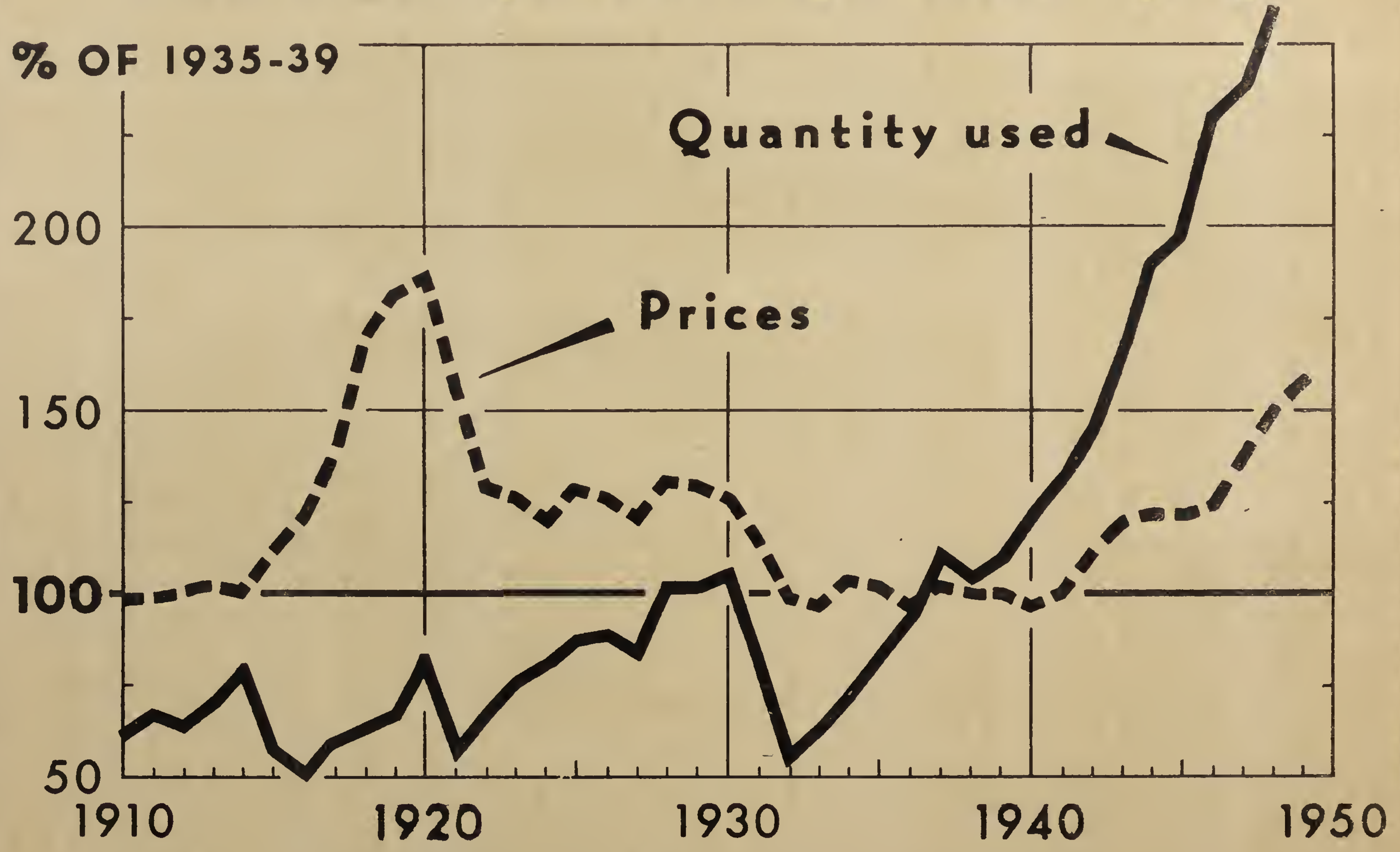
Fertilizer prices in 1950 probably will be near present levels. Farmers paid about 4 percent more in 1949 than in 1948; 10 percent more in 1948 than in 1947 and 11 percent more in 1947 than in 1946. For the past several years use of fertilizer in terms of plant nutrients has increased on an average of about 10 percent per year, with considerable variation from year to year depending on availability. Quantities of fertilizer used in 1949 were the highest on record, and the fertilizer industry has capacity to produce even larger amounts. Capacity within the industry could produce 15 to 25 percent more nitrogen, 10 to 15 percent more phosphates and about 10 percent more potash for use in 1950 than was used in 1949. Despite this, some tight spots may show up with respect to availability of potash and some specific mixtures.

Even though prices of many farm products are declining, more fertilizer can be used profitably in many areas on crops that heretofore have not received much fertilizer, such as feed crops and pastures. This is particularly true if residual effects of fertilizer are taken into account.

Close attention to yield response to different rates of fertilizer application, the value of the additional product obtained from the use of the fertilizer and the cost of the fertilizer are important factors to consider in determining the most profitable level of expenditure for fertilizer in the year ahead. There are many acres of land on which fertilizer use is far below quantities that would pay. The amount of fertilizer that can be used profitably differs from farm to farm.

In calculating costs and returns from use of fertilizer, account must be taken of (1) cost of the fertilizer applied, (2) cost of application, (3) cost of harvesting the additional yield obtained from the application of

## FERTILIZER PRICES AND USE



CONSUMPTION DATA FROM PISAE, PRICE DATA FROM BAE

U. S. DEPARTMENT OF AGRICULTURE NEG. 43920A-XX BUREAU OF AGRICULTURAL ECONOMICS fertilizer, (4) additional returns from the crop on which the fertilizer was applied, and (5) additional returns from subsequent crops grown on the land on which the fertilizer was applied. This is particularly true with regard to phosphate fertilizers which often have an important residual effect on crop yields. It is less true of nitrogen, the direct effect of which is obtained mostly in the season of application. For an illustration of results from different applications of fertilizer in crop rotations, see the example at the end of this report.

## Building Materials, Supplies and Containers

Prices of many of these materials have remained near 1948 levels, although there have been price reductions for a few items. Supplies have continued to improve and in 1949 generally have been ample. This trend is expected to continue into 1950.

Lumber production for 1949 is estimated to be down about 10 percent from the 1948 output. However, gross stocks apparently are increasing and indicate lower consumption relative to the production rate. Between July 1, 1948 and July 1, 1949 estimated retail stocks increased about 2 percent and stocks at other points in trade channels increased somewhat more. At the same time, the wholesale lumber price index for 1949 is down about 11 percent from the 1948 level. Retail price declines have not been so great, but have been largest for sheathing and other framing lumber; the grades primarily used on farms.

Shipments of steel mill products have continued to increase in 1949 despite substantial decreases in total tonnage of steel produced. The total available supply of steel products such as wire fencing, nails, staples, galvanized sheet iron, and pipe increased substantially during the first half of 1949 as compared with 1948. Galvanized sheet is still under rigid export controls, and together with certain kinds of pipe, remain in rather short supply. But there are indications that even for these items all essential agricultural needs will be met in 1950.

Decrease in wire bale-tie production apparently reflects lack of demand, possibly some shift to twine. Raw steel prices have changed little. A few retailers of steel products have had to reduce prices to keep inventories moving. During the past few years wide use has been made of aluminum products in farm building. Demands for these materials appear to have eased off slightly. Aluminum production is down probably in response to lower demands at present prices.

The price of cement is about 5 percent higher than in 1948. Production during the first six months of 1949 was about 5 percent higher than during the same period in 1948. Shipments have dropped about 3 percent, but stocks on hand July 1, 1949 have increased about 90 percent from a year earlier. They have almost doubled within the year. There should be no difficulty getting all the cement needed for farm use. Continuing increase of dealer inventories may force some price declines.

Packages and containers of all kinds are expected to be readily available at gradually reduced prices. This includes wooden boxes, baskets, paper cartons and bags, fibre bags, tin and glass containers, etc. The industry anticipates its first "normal" year in a decade. That means supplies probably will be adequate to meet demands. Some wartime expanded capacity is still available and expected demands are somewhat lower so prices are expected to be slightly lower. Despite expansion in its use, indications are that supplies of baler twine will be quite adequate in 1950.

## Insecticides and Fungicides

No shortage is expected in materials needed to protect next year's crops from insects and plant diseases. Materials and facilities needed to manufacture insecticides and fungicides are generally available. Supplies of insecticides containing rotenone and pyrethrum will be adequate unless pests for which these materials are used occur in more than average abundance. Otherwise, it now appears that any shortages of insecticides and fungicides will be those which may occur locally because of failure to anticipate the needs.

During the 1949 season several important insect pests were unusually abundant over wide areas, and the demand for insecticides was considerably above average. Despite efforts to provide insecticides to meet demands, there were local shortages. The shortages were largely of the newer insecticides and occurred mostly because farmers and local dealers underestimated their needs and also delayed ordering. Newer insecticides require blending of several ingredients and cannot be manufactured and distributed as rapidly as the older standard materials, such as lead and calcium arsenate. It is important, therefore, that farmers and local dealers determine as promptly as possible the kinds and quantities of insecticides that they need and place appropriate orders with their suppliers.

Prices of insecticides and fungicides in 1950 will be about the same as they were during the latter part of 1949.

## Farm Land Values and Rentals

Land values appear to have turned the peak in most parts of the country. The national index reached its highest level in November 1948 when land values were 77 percent above the 1912-14 average and 113 percent above 1935-39. By March 1949, values had turned downward in most of the Mountain and Pacific Coast States and in several scattered States elsewhere. The national index for March was 1 percent below the November level, the first decline in 10 years. In those States where values continued to increase, the gains were generally smaller than had occurred during a comparable period in previous years (table 5).

Values continued to decline in all but 11 States during the 4 months ending July 1, 1949. The national index for July 1949 was 172 (1912-14=100) --2 percent below March 1949, 3 percent below November 1948 and 1 percent below a year earlier. In about one-fourth of the States, the July index dropped for the second consecutive period. Values in Montana were down 12 percent from the November peak, while values in Oregon and Wyoming declined 10 and 9 percent, respectively. In 3 other States--Washington, Colorado and Texas--values have dropped 8 percent. Values continued firm to slightly higher in Minnesota, Iowa, Illinois, New York, New Jersey, Delaware and Maryland.

Financing of farm purchases has not been a problem in most areas. Although some lenders have become less willing to finance buyers with small down payments, most buyers have been able to obtain adequate financing. Interest rates have increased slightly. The bulk of the new mortgage credit has been obtained from individuals and commercial banks but many of these mortgages have been for short periods. Buyers who do not make substantial payments on the principal while farm income continues high may find it difficult to obtain refinancing.

The declines in the prices of farm products since mid-1948, and the prospect of lower net farm income for 1949 have contributed to a substantial decline in the number of farm sales during the past year. About 17 percent fewer farms were sold during the year ending March 1949 than during the previous year. Recent trends in agricultural prices and industrial activity have caused some prospective buyers to delay their purchases, and others have reduced their offers below current asking prices. In the better farming areas, however, present owners have been reluctant to sell at prices offered because farm land continues to yield near-record returns.

Table 5.- Farm real estate 1/: Index numbers of average value per acre and percentage change, by geographic divisions

| Geographic divisions | Index numbers (1912-14=100) | | | Change during year ending | | Change during 4 months ending | |
|---|---|---|---|---|---|---|---|
| | 1920 | 1949 March | 1949 July | July 1948 | July 1949 | March 1949 | July 1949 |
| | | | | Percent | Percent | Percent | Percent |
| New England | 140 | 166 | 161 | 5 | 0 | 0 | -3 |
| Middle Atlantic | 136 | 162 | 161 | 6 | 5 | 3 | -1 |
| E. North Central | 161 | 168 | 164 | 9 | -1 | 1 | -2 |
| W. North Central | 184 | 142 | 141 | 12 | 2 | 1 | -1 |
| South Atlantic | 198 | 236 | 229 | 6 | 0 | 2 | -3 |
| E. South Central | 199 | 273 | 267 | 7 | 3 | 4 | -2 |
| W. South Central | 177 | 197 | 193 | 13 | -3 | -4 | -2 |
| Mountain | 151 | 163 | 161 | 8 | -2 | -5 | -1 |
| Pacific | 156 | 196 | 195 | -4 | -6 | -6 | -1 |
| United States | 170 | 175 | 172 | 7 | -1 | -1 | -2 |

1/ Farm land with improvements as of March 1, except where otherwise indicated.

Gross rental income in 1948 was only about 3 percent less than the 1947 peak. Higher costs, especially for taxes and building maintenance, however, reduced net rents about 10 percent. Despite this decline, the rate earned on farm real estate investments in 1948 was still nearly twice the interest rate on farm mortgages, and substantially higher than could have been earned on alternative investments.

The outlook for land values depends primarily on trends in prices of farm products, and it appears likely that land values will continue to show moderate declines during the next 12 months. Price supports are likely to become of increasing importance in this respect. The level of agricultural price supports and the type of production controls which may be used will have a direct bearing on future trends in land values in different areas.

## Interest, Taxes, and Insurance

Interest payments - Interest payments on total farm debt during 1949 are expected to be about 7 percent higher than for 1948. On non-real-estate farm debt during 1949 interest payments appear to be averaging about 10 percent more than in 1948 and over 70 percent greater than in 1945, the last year of war. Although a small increase in interest rates from some lenders may have occurred during the past year or two it is not an important factor in the higher interest charges. The rate of the postwar rise of non-real-estate debt appears to have slowed up during 1949. Interest payments probably will increase further in 1950 but the increase will be smaller than during the past 3 years.

In 1949 farmers mortgage interest payments probably will be about 5 percent more than they paid in 1948. This rise in interest payments is due almost entirely to the increase in mortgage debt as the average interest rate is expected to change little if any. As a consequence of this increase in farm mortgage interest payments, the total interest paid on mortgage debt in 1949 will be about 11 percent higher than it was in 1946 when the mortgage debt was at a 33-year low. While there was an apparent strengthening of interest rates on new mortgage loans in the latter part of 1948 and early 1949, this tendency has again weakened along with a general easing of the money market. There is also a tendency for the proportion of the farm-mortgage debt held by the lower rate lenders to increase at a somewhat greater rate than in the years just past.

Taxes - Taxes levied on farm property in 1948 and payable late in 1948 or early in 1949 averaged about 8 percent higher in 1948 than in the previous year. This is the fifth consecutive year in which the average for the country as a whole has risen. Average taxes per acre for the United States increased from $0.53 in 1947 to $0.57 in 1948; the index (1909-13=100) advanced from 254 to 275. This rate of increase, however, is not as great as it was from 1946 to 1947 when the index rose 15 percent. The index series, which goes back to 1890, is now nearing the all-time high of 281 that was reached in 1929.

Taxes per $100 of real estate value for the United States increased from $0.96 in 1947 to $1.00 in 1948. This is only the second rise in the tax-value ratio to appear in a decade. From 1939 to 1944, taxes per $100 of value fell each year chiefly because the value of farm real estate advanced substantially. In 1945 and 1946, however, percentage increases in taxes matched increases in land values and in 1947 and 1948 exceeded them. The evidence suggests, even more than in the previous year, that land values are losing their upward momentum whereas taxes continue to rise. The largest rise shown was in the Pacific States, although significant increases occurred in individual States in other widely scattered regions.

The West South Central region was the only group of States that showed no change from 1947 to 1948 in the index of taxes per $100 real estate value. This is in contrast to the Pacific division where the index rose from 342 to 396; a gain of 54 points in the same period.

For a few States, the index of taxes per acre showed a trend that differed from that of the preceding year. For Rhode Island, Tennessee, and Texas, the indexes fell 4, 7, and 14 points, respectively. In Rhode Island and Tennessee in 1947 general retail sales taxes were introduced into the revenue systems. In Delaware, Arkansas, Montana, and New Mexico, taxes per acre remained about the same. Taxes per acre increased again in Alabama, Louisiana, and Mississippi after several years of little or no change. The index of taxes per acre for Washington rose 77 points in contrast with a decrease shown for the previous year. This was the largest percentage increase among the 48 States.

Increased taxes in most States are the over-all results of a continuing demand for more and better public services, particularly schools and roads. In some States, assorted local factors have affected tax rates. In Illinois, for instance, increased assessed values (at the same or higher tax rates) have resulted recently from a new assessment--equalization program whereby the State equalizes annually all local assessments. In Tennessee, both increases and decreases in property taxes were reported by the various counties of the State. The increases were made either to implement the school building program, to increase teachers' salaries, or to build roads. But in other counties, sales-tax funds, which became available for the first time during this period, enabled public officials to proceed with their school-expansion programs without increasing property taxes. In some cases these funds made it possible for them to lower taxes.

Other taxes have direct or indirect effects upon farm costs but they are technically not included as farm costs. The Federal income tax payments of farmers, for instance, went down in amount for the first time in several years. Tax payments in 1949 on 1948 income were somewhat less, primarily because of changes in rates and exemptions. Meanwhile automotive taxes paid by farmers increased.

Insurance - Insurance premiums paid by farmers probably will be higher in 1949 than in 1948, primarily because of further increases in the amounts of fire and windstorm insurance carried to cover higher property replacement costs. While fire insurance rates have not changed appreciably in recent years, some companies have had to increase their current windstorm rates as a step in replenishing reserves which were reduced by heavy windstorm losses paid in 1947 and 1948.

Farm fire losses probably will be no higher in 1949 than in 1948, and may be down slightly. Indications are that windstorm and crop-hail losses will be less this year than in the two previous years.

Farmers took somewhat less crop-hail insurance this year than last, and premiums paid will be correspondingly less. The volume of crop losses from hail damage are approximately the same this year as last. The lower participation is attributed to the poor crop prospects in some parts of the country during the hail season. There was widespread damage in **late** spring in areas including Texas, Oklahoma, and Kansas. The 3 State hail funds wrote about 10 percent less insurance this year than last, but their premium collections, on the whole, probably will not equal insured losses.

- - - -

The following example illustrates the effect of varying rates of application of phosphate fertilizer in the year in which applied and also in each of 5 subsequent years. It also shows the residual effect of these different rates of application.

Yields per acre in a six year irrigated rotation with varying levels of phosphate fertilizer available to the crops through applications made in the first year 1/

| Units of fertilizer available 2/ | 1st year alfalfa (tons) | 2nd year alfalfa (tons) | 3rd year alfalfa (tons) | 4th year potatoes (cwt.) | 5th year potatoes (cwt.) | 6th year wheat (bu.) |
|---|---|---|---|---|---|---|
| 1 | 2.15 | 2.99 | 2.67 | 255 | 195 | 57.2 |
| 2 | 3.16 | 4.91 | 4.23 | 275 | 240 | 72.0 |
| 3 | 3.66 | 6.11 | 5.21 | 3/ 279 | 250 | 75.8 |
| 4 | 3.91 | 6.86 | 5.81 | 279 | 3/ 252 | 76.7 |

1/ This table represents a preliminary analysis of some unpublished yield data obtained under Western irrigation conditions. It is illustrative only and is applicable only to conditions similar to those under which the data were obtained.

2/ One unit in this example is 36 pounds of effective plant nutrients ($P_2O_5$). This would represent 180 pounds of superphosphate (20% $P_2O_5$); or 75 pounds of triple superphosphate, (48% $P_2O_5$).

3/ No gain was obtained from more than 3 units in the 4th year, while it is not until the 5th year that the effect of the rate represented by 4 units became negligible, as measured in terms of potato yields.

Each column reading downward shows the effect on yields that year of different quantities of phosphate made available to the crop as a result of applications in the first year. To determine the most profitable quantity of fertilizer to apply, it is necessary to examine the increase in yield that is associated with each additional unit made available. These yield increments are shown in the following table.

Yield increments each year in a six year irrigated rotation with varying levels of phosphate made available to the crops through applications made in the first year

| Additional units of fertilizer | 1st year alfalfa (tons) | 2nd year alfalfa (tons) | 3rd year alfalfa (tons) | 4th year potatoes (cwt.) | 5th year potatoes (cwt.) | 6th year wheat (bu.) |
|---|---|---|---|---|---|---|
| 2 over 1 | 1.01 | 1.92 | 1.56 | 20 | 45 | 14.8 |
| 3 over 2 | 0.50 | 1.20 | 0.98 | 4 | 10 | 3.8 |
| 4 over 3 | 0.25 | 0.75 | 0.60 | 1/ 0 | 2 | 0.9 |

---

1/ Increment would be 0.8 cwt. if decimals were carried. It should be kept in mind also that different seasonal conditions in the years influence yields and yield increments. No effort has been made to eliminate the effect of such influences.

It is the value of these increments, less the cost of (1) a unit of fertilizer, (2) the cost of applying it, and (3) the cost of handling the additional yield, that determines the most profitable levels at which to maintain the plant nutrients available to the crop. For example, using the final or fourth increment shown for the first year, if (1) a unit of superphosphate (180 pounds) costs $2.25, (2) the cost of applying it is $0.50 per acre, and (3) the cost of handling an additional quarter ton of hay is $0.40, the total additional cost of the 4th unit of fertilizer would be $3.15. If the net price of hay to the farmer were only $12.60 per ton, he would break even ($3.15 ÷ 0.25 ton additional yield equals $12.60).

These figures approximate current fertilizer costs, but hay prices in most areas are much higher than $12.60 per ton. Under current conditions there would be a substantial gain even in the first year from making available the equivalent of 720 pounds of superphosphate. If there were already available in the soil, phosphate nutrients equivalent to that supplied by one unit (180 pounds in this example), it would be necessary to add only the third unit, or a total of 540 pounds, to obtain the quarter ton increase in hay yield.

This point illustrates the importance of a better knowledge of yield response to fertilizers as influenced by the nutrient status of soils when determining what rate of application will be most profitable.

If the analysis contained in the previous paragraph is applied to the second and third years of the rotation, it will be found that the gains from the 4th unit of fertilizer made available through the heavier application are higher than they were in the first year when the fertilizer was applied. This is because of the residual effects. The greatest gains from all rates made available in the first year are obtained in the second year. But even in the third year the gains at all nutrient levels are greater than in the year when applications were made. As alfalfa was left for only three years the economic gains due to residual effects throughout the rotation can be appraised only through estimating future prices and values of the yield increments for the different crops, and the cost of handling the additional yields expected at different rates of application. It is clear that additional rates of application would not pay in terms of the residual

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effect on the yields of potatoes and wheat in the 4th, 5th, and 6th years. Moreover, if potatoes are considered alone, it would not pay to bring the available phosphate nutrients higher than is represented by application of the 3rd unit in the first year. But if a farmer is following a definite rotation, the rate of application should be determined by returns from the rotation. In the case of the alfalfa under the conditions of the illustration shown, it is probable that a 5th unit would be profitable under favorable price relationships.

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# THE Farm Cost SITUATION

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BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

FCS-8 BAE MARCH 1950

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## GENERAL SITUATION

Prices in 1950 of most items purchased by farmers for use in production are expected to average 3 to 4 percent lower than in 1949. The index (1935-39=100) of prices paid by farmers for items used in production averaged 192 in 1949, or 5 percent lower than the 202 in 1948. (See table on page 2.) Prices of many items such as motor vehicles and supplies, farm machinery, fertilizer and supplies, however, were higher in 1949 than in 1948.

Probably 1950 will be the first year in nearly two decades that prices of all major groups of items purchased declined. But farmers cannot look on the decline with too much optimism because it is probable that prices received by them for products sold also will decline. The

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## Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39=100)

(Revised January 1950)

| Year | All commodities 1/ | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Fertilizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 103 | 100 | 71 | --- | --- | 105 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 119 | 132 | 146 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 82 |
| 1935 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 105 |
| 1940 | 99 | 95 | 113 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 105 | 103 | 127 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 202 | 238 | 313 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 192 | 196 | 278 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| Jan. | 195 | 210 | 283 | --- | --- | --- | --- | --- | --- | --- | 364 |
| Feb. | 192 | 201 | 271 | --- | --- | --- | --- | --- | --- | 210 | --- |
| Mar. | 196 | 201 | 300 | 141 | 199 | 173 | 174 | 215 | --- | 206 | --- |
| Apr. | 195 | 200 | 298 | --- | --- | --- | --- | --- | 148 | 197 | 353 |
| May | 195 | 198 | 299 | --- | --- | --- | --- | --- | --- | 197 | --- |
| June | 193 | 192 | 292 | 141 | 200 | 178 | 176 | 210 | --- | --- | --- |
| July | 190 | 194 | 260 | --- | --- | --- | --- | --- | --- | --- | 361 |
| Aug. | 189 | 195 | 257 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 189 | 192 | 265 | 140 | 199 | 179 | 176 | 204 | 146 | 197 | --- |
| Oct. | 190 | 190 | 273 | --- | --- | --- | --- | --- | --- | --- | 342 |
| Nov. | 189 | 188 | 272 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 190 | 191 | 269 | 140 | 199 | 178 | 176 | 203 | --- | --- | --- |
| 1950 | | | | | | | | | | | |
| Jan. | 191 | 191 | 284 | --- | 199 | --- | --- | --- | --- | --- | 355 |
| Feb. | 191 | 190 | 294 | --- | --- | --- | --- | --- | --- | 197 | --- |
| Mar. | 193 | 191 | 306 | --- | --- | --- | --- | --- | --- | 194 | --- |

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1/ Excluding wages.

Note: For a list of items included in this table see "Agricultural Prices", Bureau of Agricultural Economics, January 31, 1950.

index (1935-39=100) of prices received by farmers for commodities sold averaged 232 in 1949 compared with 266 in 1948 and 257 in 1947. A further decline of about 10 percent is expected in 1950.

Generally speaking, price relationships in 1949 were favorable to high farm production. Despite the expected decline of prices received in 1950 the ratio of prices received to prices paid by farmers will still be relatively favorable compared with prewar. In 1949, prices received by farmers for products sold averaged about 232 percent of the prewar (1935-39) average, and prices paid averaged 192 percent of the prewar average.

There are many ways for farmers to cut corners and maintain high production at low unit costs. The continuing price-cost squeeze will mean that farmers generally will need to do a careful job of planning their crop and livestock operations. The supply of farm workers in 1950 is expected to be more plentiful than in 1949, and at slightly lower rates. But costs of operating motor vehicles and farm machinery will remain high in 1950. Power and machinery costs per acre frequently can be cut by combining certain field operations and loading the tractor or power unit to optimum capacity. Per acre costs of both labor, power, and machinery can be reduced by combining operations where possible to obtain maximum efficiency and economy from the power unit. Consideration should be given to whether the extra harrowing, cultivation, or operation is worthwhile or will pay.

Farmers can cut costs by more efficient use of fertilizers on crops that will respond to their use. Profits can be increased through the use of fertilizers by applying the proper fertilizer material in the best manner at the proper time. In general, phosphates and complete fertilizers should be applied in advance of planting. Nitrogenous materials, on the other hand, are frequently applied as a top or side dressing. Phosphate and potash fertilizers have important residual advantages or effects particularly in the first year following their application.

Many livestock feeders could reduce unit costs by feeding balanced rations and feeding for maximum production and to optimum weights. Hogs, for example, on many farms are fed less high protein feeds than are required for greatest production or gain efficiency. More pasture and better pasture management also will increase returns. These are only a few of the ways in which individual farmers can maintain profits in the year ahead.

Most items of machinery and equipment are expected to be plantiful in the year ahead. Production of farm machinery is at a high level and stocks are the largest since 1941. Prices for new machinery are expected to average only slightly lower than in 1949, but trade-in allowances will be more liberal than in several years.

Feed costs in the first quarter of 1950 were about 7 percent lower than in the first quarter of last year. They probably will average for 1950 about 7 percent below last year's level. Prices received for livestock and livestock products in the first quarter of 1950 averaged about 10 percent lower than a year ago. The feeding ratio therefore is less favorable than a year ago, but generally is still favorable. The total supply of concentrates per animal unit is now the largest on record.

Prices of seeds in the first quarter of 1950 averaged only slightly lower than a year earlier. Prices of grass seeds, however, are relatively higher than legume seeds. Some farmers might profit by postponing some grass seeding and by substituting legumes for grass seeds in many of the seeding mixtures. The total supply of legume, grass, and cover crop seeds is about 5 percent larger than it was for the 1949 season. Supplies of grass seed are about the same, but the supply of legume seeds is about 8 percent higher.

Prices of fertilizer in 1950 probably will average only slightly lower than in 1949. But it will still pay farmers to continue using fertilizers. Compared to prewar, fertilizer prices are still low relative to prices of farm products. Supplies of ammonium nitrate apparently are not adequate in all areas to meet this season's needs. However, except for localized seasonal tight spots, supplies of other nitrogenous materials such as sodium nitrate and ammonium sulphate are expected to be generally sufficient in most sections of the country. Supplies of phosphates are expected to be adequate, and potash in fair supply considering the two months' loss of domestic production.

Prices of building materials, supplies and containers are expected to be steady to slightly higher in 1950 than in 1949. None of these materials has decreased substantially in price during the past six months. Steel prices are up about $4 per ton.

Supplies of most building materials and related items are expected to be more readily available and adequate to meet farm needs. Total steel production in 1949 was more than 10 percent below production in 1948. However, production in 1949 was the third largest for any peacetime year. Lumber production also was about 10 percent lower in 1949 than in 1948 but December stocks were about the same as a year ago. Prices of cement have increased steadily and a continued but small increase may be expected in 1950.

No significant change from the 1949 to the 1950 season is expected in prices of most insecticides and fungicides. Increased transportation costs may bring about minor increases in prices of some items. For the most part, materials needed to protect crops from insects and diseases during the 1950 season are expected to be available. If insects appear in more than average numbers during the 1950 season, supplies of some of the new insecticides may not be adequate to meet all demands. Local shortages may occur under these conditions. However, realizing the advantages of protecting their crops more farmers are ordering insecticides and fungicides well in advance of the season.

Current and prospective economic conditions plus the 17 percent drop in net farm income in 1949 brought the first decline of the past 10 years in land values. Prospective buyers are more inclined now to shop around for a farm that will pay out over the long run. Quality of land and conditions of buildings are receiving more attention by buyers than in recent years. Financing the purchase of farm land is not as easy as it was a few years ago.

The amount of interest payments on the total farm debt will increase again in 1950. Such payments on short-term debt during 1950 probably will be about 5 percent greater than during 1949. Interest payments on farm mortgage loans can be expected to show an increase of about 6 or 7 percent during 1950. There is at present no evidence that interest rates will rise. Therefore, the increase in interest payments will result from a further increase in the amount of farm-mortgage loans outstanding.

Tax levies per acre of farm real estate which were payable late in 1949 and early 1950 are expected to average about 8 percent higher than during the previous year. This is the fifth year in which the increase in such levies has equaled or exceeded 8 percent, making the 1949 levy per acre the all-time high.

The total cost to farmers for insurance carried with mutual insurance companies averaged about 22 cents per $100 of insurance in 1949. This was about 12 percent lower than in 1940. Losses of farmers paid by farm mutuals decreased in 1949 for the first time since 1942, and were about 13 percent lower than in 1948.

## Farm Labor

Farm wage rates in 1949 averaged lower than in 1948. This was the first drop in wage rates since 1939 and followed the big increase during the war and postwar years (table 1). Wage rates are still more than 3.5 times the prewar average, but have increased only slightly more than gross farm income per worker. An additional decrease is expected in 1950. Lower farm wage rates probably will prevail in all parts of the country whereas in 1949 they were higher than in 1948 in several States.

A substantial number of farmers depend on custom operators and machines for many jobs. Lower custom rates are in prospect for 1950. The lower rates will be in line with the drop in wage rates and decreased prices of farm products.

No general shortages of farm workers are expected to develop in 1950. An adequate number of workers was available last year to do farm jobs well and on time, and an easier farm labor market is in prospect for this year. Experienced workers for certain seasonal jobs may be limited in some local areas. However, with an increasing percentage of most farm jobs being done with power machinery, it is expected that the need for farm labor will be less in 1950 than in 1949. A reduction in number of farm workers probably will occur in all parts of the country. The reduction will be greatest in regions where acreage allotments result in fewer acres planted to labor intensive crops such as cotton.

## Farm Power and Machinery

Prices of farm machinery have changed but little from the record high prices of the past 18 months. Little change in prices of these items is expected in 1950. However, trade-in allowances will be more liberal than in several years. Prices of farm machinery since 1941 have been relatively favorable in terms of price of farm products, farm incomes, and farm wage rates. But lower prices of farm products, lower farm incomes, together with acreage reductions of major crops are likely to be reflected in a reduced volume of purchases of farm machinery and equipment in 1950. The percentage reduction in dollar purchases of new farm machinery and equipment in 1950 likely will be at least as large as the percentage reduction in farm income from 1949 to 1950.

Adequate supplies of farm machinery are in prospect for 1950. Dealers' stocks of both new and used machines are now larger than at any time since 1941. As a result farmers' purchases can be expected to trend toward the seasonal buying pattern that prevailed prior to 1942. This will be in contrast to the war and early postwar years, when farmers purchased machinery when they could get it. Before 1942, most purchases were made just ahead of the seasons of heavy use.

Complete details of farm machinery and equipment production for 1949 are not yet available but it appears likely that production may have equaled or exceeded the record high production of 1948. Exports of farm machinery in 1949 were even higher than the large 1948 exports. Exports to ERP countries were lower in 1949 than in 1948, owing largely to increased foreign production of farm machinery but exports to their overseas territories and to non-ERP

Table 1.- Farm wage rates and related data, United States,
1935-39 average and 1940-49 inclusive
(Index numbers 1935-39=100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates 4/ | Ratio of farm wage rates to | |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ | | Production per worker | Gross farm income per worker 5/ |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 97 | 96 | 100 | 108 | 111 | 107 | 96 | 98 |
| 1941 | 95 | 94 | 99 | 111 | 117 | 125 | 107 | 89 |
| 1942 | 95 | 94 | 99 | 123 | 129 | 163 | 126 | 87 |
| 1943 | 94 | 94 | 94 | 120 | 128 | 217 | 170 | 92 |
| 1944 | 92 | 93 | 87 | 124 | 135 | 263 | 195 | 104 |
| 1945 | 90 | 92 | 82 | 123 | 137 | 297 | 217 | 110 |
| 1946 | 92 | 94 | 84 | 126 | 137 | 320 | 234 | 105 |
| 1947 | 93 | 95 | 87 | 121 | 130 | 346 | 266 | 97 |
| 1948 | 92 | 93 | 89 | 131 | 142 | 365 | 257 | 99 |
| 1949 6/ | 90 | 91 | 87 | 128 | 142 | 354 | 249 | 104 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Simple average of quarterly indexes seasonally adjusted.
5/ Because of the increase in volume of production and the increase in the price of farm products, the gross farm income per worker has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1949.
6/ Preliminary.

countries were higher in 1949 than in 1948. Purchases of new machinery by U.S. farmers in 1949 probably were not as large as in 1948. As a result, a larger quantity of all kinds of machinery went into dealers' stocks. These stocks on January 1, 1950 were the highest since 1941.

Total volume of power and machinery on farms on January 1, 1949 was about 60 percent more than the average of the prewar years 1935-39 and the highest on record (table 2). This increase took place notwithstanding a decrease of more than 50 percent in total horse and mule numbers. For tractors and for machinery and equipment other than tractors and other motor vehicles, the increase was about 180 percent. There were more than twice as many farm motor trucks and 35 percent more automobiles on farms January 1, 1949 than in prewar years.

Farm purchases of tractors, motor trucks, automobiles and other farm machinery in 1949 were again large and the numbers on farms January 1, 1950 were larger than for any previous year. There were approximately 3,750,000 tractors of all types on farms January 1, 1950.

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-50
(Index numbers 1935-39 = 100)

| Year or period | Number on farms, January 1 1/ | | | | | | Volume on farms January 1 2/ | | Gross farm income calendar year 3/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules, all ages | Work stock 3-years old and over | Colts under 1-year of age | Tractors | Auto-mobiles | Motor trucks | All machinery and equipment other than tractors and other motor vehicles | All farm power, (including work animals) machines and equipment | | |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 119 | 106 | 106 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 126 | 110 | 133 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 140 | 116 | 178 | 148 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 157 | 121 | 221 | 179 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 161 | 121 | 232 | 182 |
| 1945 | 76 | 77 | 54 | 195 | 107 | 153 | 176 | 126 | 244 | 188 |
| 1946 | 70 | 72 | 41 | 208 | 107 | 159 | 193 | 130 | 280 | 217 |
| 1947 | 64 | 66 | 35 | 225 | 116 | 178 | 214 | 137 | 332 | 259 |
| 1948 | 58 | 61 | 31 | 253 | 127 | 197 | 247 | 150 | 338 | 267 |
| 1949 | 52 | 55 | 27 | 281 | 136 | 216 | 281 | 163 | 305 | 234 |
| 1950 4/ | 47 | 50 | 22 | | | | | | | |

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1/ The 1935-39 average was for horses and mules all ages, 15,750,000 head; for workstock 13,700,000 head; for colts 744,000 head; for tractors 1,244,000; for automobiles 3,896,000; and there were 973,000 motor trucks.
2/ In terms of 1935-39 prices. 3/ Includes government payments. 4/ Preliminary.

Discards of many farm machines in 1949 were larger than in the years 1942-48 and they can be expected to increase in relation to purchases in 1950 and in the years ahead.

Along with the increase in farm power machines there have been continuous decreases in the numbers of horses and mules on farms. The reduction has been especially pronounced since 1945. Annual reduction in horse and mule numbers since 1945 have averaged almost 10 percent. Prices of horses and mules in recent years have been extremely low and this has been reflected in smaller colt crops. The 1949 colt crop was only 164,000 head; the smallest in more than a century. Colt crops of this size if continued would maintain a horse and mule population of less than 3,000,000 head. There were 7,463,000 head of horses and mules of all ages on farms January 1, 1950.

## Feed

Average feed costs in March were down a little from a year earlier. The index of livestock and livestock product prices was down about 8 percent so that the ratio was not quite as favorable for feeding as a year ago, but nevertheless generally favorable. It was 15 percent above average.

Feed costs during the first half of 1950 are expected to be slightly lower than in 1949 (table 3). The price of sorghum grains and hay in March was lower than a year ago, while corn, oats and barley were a little higher. Mixed feeds, oil meals and mill feeds were lower than a year earlier. The index of prices paid by farmers for feeds was down about 5 percent. Thus, purchased feeds have come down more than feed grains. In March 1950 the average value of a ration fed to poultry was $3.40 per hundred pounds compared with $3.47 a year earlier; a decline of 7 cents per cwt. The average value of the concentrate ration fed to milk cows was down 6 percent in the milk selling areas and 3 to 4 percent in the butterfat areas.

Prices of hogs, poultry, eggs and milk in recent months were down from a year earlier. Returns per $1.00 of feed cost for eggs and chickens were much less than a year ago and much below average (table 4). Return to farmers selling butterfat was better than a year ago, but still below the 1935-39 average. The margin over feed cost in dollars is much larger than prewar for both milk and butterfat even though the return per $1.00 of feed may be less. Return for feed fed to hogs was less than a year ago but still above average.

These recent price relationships, if continued, will tend to discourage the production of eggs and chickens except on the most efficient farms. High producing strains of pullets use less feed per dozen eggs. The close culling of non-producing hens is a way of reducing feed costs of the laying flock. The maximum use of pasture for raising pullets this coming summer is another practice that will save the more expensive feed and reduce costs. Rations with adequate protein content cost less per dozen eggs or per pound of chicken than unbalanced rations.

Average weights of barrows and gilts marketed this winter have been lower than a year earlier. They are back nearly to prewar weights. Heavy hogs

Table 3.- Average value of feeds in the United States, March 15, 1950, with comparisons

| Item | Unit | March 15, 1949 | February 15, 1950 | March 15, 1950 |
|---|---|---|---|---|
| Prices received by farmers | | | | |
| Corn | Bushels | $ 1.18 | $ 1.16 | $ 1.19 |
| Oats | do. | .70 | .71 | .72 |
| Barley | do. | 1.06 | 1.09 | 1.10 |
| Sorghum grain | Cwt. | 2.17 | 1.88 | 1.93 |
| Hay, baled | Ton | 25.00 | 21.50 | 21.20 |
| Feed grains and hay, Index number (1935-39=100) | | 185 | 180 | 183 |
| Prices paid by farmers | | | | |
| Mixed dairy feed 16% | Cwt. | 3.59 | 3.38 | 3.41 |
| Laying mash | do. | 4.45 | 4.31 | 4.34 |
| Cottonseed meal | do. | 3.89 | 3.76 | 3.74 |
| Soybean meal | do. | 4.09 | 4.02 | 4.11 |
| Linseed meal | do. | 4.40 | 4.26 | 4.26 |
| Meat scrap | do. | 6.04 | 5.88 | 6.15 |
| Bran | do. | 3.15 | 2.80 | 2.86 |
| Middlings | do. | 3.25 | 2.91 | 3.00 |
| Alfalfa hay, baled | Ton | 35.80 | 32.40 | 31.80 |
| Prices paid by farmers, Index number (1935-39=100) | | 20[illegible] | 191 | 190 |
| Average value of ration fed to poultry and milk cows | | | | |
| Fed to poultry | Cwt. | 3.47 | 3.35 | 3.40 |
| Fed to milk cows in milk selling areas | do. | 3.23 | 3.00 | 3.04 |
| Fed to milk cows in cream selling areas | do. | 2.74 | 2.60 | 2.65 |

have sold at a discount compared with medium weight hogs. However, the discount has not been large enough to offset the gain in weight. It would have paid many farmers to market hogs at heavier weights this winter. With prospective increasing numbers of hogs coming to market soon and seasonally declining prices expected it probably will not pay to carry them to heavy weights this spring.

One of the most important places that feed can be saved on hogs is to reduce death loss. Farmers should strive hard to see that all of the pigs born alive are saved. If a sow weans 16 pigs in a year from two litters the feed charge per pig to weaning time is from 100 to 125 pounds of grain. If she saves only half as many pigs the feed cost per pig to weaning is obviously nearly twice as much. Hogs on many farms are fed less high protein feeds than they require for greatest production or gain efficiency. It is especially important that they have adequate protein from weaning up to 125 pounds weight. Hogs fed properly require less time to reach marketable weights. They can be ready for market 2 to 3 weeks early and thereby often bring higher prices than those coming to market later. Thus, hogs fed properly balanced rations not only put on gain with less feed per pound of gain but also can be marketed early and often enable producers to obtain a better price.

Table 4.- Returns per $1.00 of feed cost, United States, February 15, 1950, with comparisons 1/

| Item | 1935-39 average | February 15, 1949 | January 15, 1950 | February 15, 1950 |
|---|---|---|---|---|
| Eggs | $ 1.72 | $ 1.73 | $ 1.32 | $ 1.26 |
| Chickens | 1.84 | 1.90 | 1.34 | 1.44 |
| Hogs | 1.50 | 2.12 | 1.60 | 1.75 |
| Milk | 1.99 | 1.81 | 1.91 | 1.89 |
| Butterfat | 1.53 | 1.25 | 1.40 | 1.41 |

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1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of poultry ration per pound of chicken; 7½ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat. The hay for milk cows includes an allowance for silage and pasture.

Heavy feeding of grain to milk cows continues. Price relations are more favorable for heavy feeding in milk selling areas than in cream selling areas. High beef prices during the past few years have contributed to the heavy culling of dairy cows particularly in cream areas. Partly as a result of this, milk output per cow reached a new high figure in 1949. Heavy grain feeding also contributed to the high output per cow. Grain feeding during the summer period in recent years has been much higher than before the war but it is probable that it is still below the most profitable level on many farms. Pastures are seldom productive enough to supply sufficient feed even for a few weeks to maintain milk production of good cows. Grain and hay should be used liberally to supplement the pastures especially when feed output in pasture begins to fall off.

In figuring the effect of any proposed change in production practices on costs the farmer should consider its effect on the cost per pound of product obtained rather than on the cash outlay alone. Buying a few hundred pounds of soybean meal or other high protein feed will increase the total cash outlay but will decrease the cost per pound of milk or hogs produced if it is used to balance the ration. It will make the farmers' home-raised grain go farther and increase the production of livestock.

## Seeds

For 18 out of 30 kinds of seed for which retail prices are available, prices were lower on March 15, 1950 than a year earlier. Lower prices were quoted for most of the seed grains, alfalfa, red clover, Ladino clover, lespedeza, crested wheatgrass, millet, sorgo seeds, and seed potatoes. Higher prices were quoted for sweetclover, timothy, redtop, Kentucky Bluegrass, orchard grass, ryegrass and bromegrass seeds.

With prices of grass seed relatively high compared with those of legume seeds, many farmers may conserve on grass seed by sowing more legume seed for hay and pasture. Others who have been using more seed per acre than is usually recommended may cut down on the amount of seed sown per acre. Still others may to advantage delay reseeding pasture and hayland and thereby reduce the demand on the available supply.

Adequate supplies of all kinds of vegetable seeds are available, although the carryover on June 30, 1950 is expected to be smaller than last year for most kinds.

Total supply (production plus carry over) of legume, grass, and cover crop seeds is about 5 percent larger than it was for the 1949 season but about 10 percent smaller than the average for the 5 years 1944-48. Supplies of legume seeds are 8 percent larger than last year, whereas supplies of grass seeds are about the same as a year ago but only 63 percent of the 1944-48 average.

A large part of the sweetclover and bromegrass seed and much of the alfalfa seed used by farmers in the United States come from other countries. Last year 22 percent of the alfalfa seed, 47 percent of the sweetclover seed and 53 percent of the bromegrass seed were imported. Imports of these seeds from July 1, 1949 through February 1950 were less than a year earlier, but it is too early to estimate total imports of seed for this season. A large increase in imports of white clover seed, primarily from New Zealand, offsets in part the decrease in imports of other seeds.

## Fertilizer

Lower farm prices may result in some slackening in demand for mixed fertilizers for the 1950 crop season. On the other hand, farm product prices in relationship to fertilizer costs are still favorable to increased use of fertilizer. Also farmers have learned more about using fertilizers and the response in yields to their use. This will tend to keep up fertilizer consumption near current levels. The recent strike at the Carlsbad mines was responsible for loss of about two months production of potash but this is being partially overcome by imports.

Because of high demand for ammonium nitrate in some sections during the next two months, this item apparently will not be in sufficient supply to meet all requests. However, except for localized seasonal tight spots, supplies of other nitrogenous materials are expected to be adequate to meet demands during 1950. Phosphates are expected to be adequate throughout the season. This spring's supply of potash will be fair but will reflect the curtailed production of last winter. Adequate supplies are expected during the subsequent months.

Prices of fertilizer in 1950 are expected to remain near levels of 1949. Slightly lower wholesale prices of some of the materials used for nitrogenous fertilizers are offset by higher freight costs so that prices to farmers will probably be about the same as for the past year.

One way of figuring fertilizer costs for individual farmers is in terms of the value of yields sacrificed by not using enough fertilizer. Surveys of fertilizer use on farms for the year 1947 indicate that considerably more nitrogen is being used on corn in the Eastern and Southern States. On farms in North Carolina where corn was fertilized, 96 percent of the acreage was treated at an average rate of about 250 pounds per acre. The most common grades used were 4-10-6 and 16-0-0.

About one-third of the farmers interviewed in North Carolina that used fertilizer on corn, applied straight nitrogen material (mostly 16-0-0). About half of these had previously applied a complete fertilizer such as 4-10-6 or 5-10-5. Where both complete and straight nitrogen fertilizer was applied on corn, the average rate was 340 pounds of complete fertilizer, followed by approximately 110 pounds of 16-0-0 as a side dressing. In terms of plant nutrients (nitrogen, phosphoric acid, and potash) the average rates per acre were 68 pounds in complete fertilizer and 18 pounds in straight nitrogen materials.

These average rates seem quite low when compared with response obtained from fertilizer applications on corn in some areas. For example, experimental results in North Carolina on loamy sand indicate that when 180 pounds of plant nutrients (20, 80, and 80 pounds of N, $P_2O_5$, and $K_2O$, respectively) had been applied at planting time as much as 150 pounds of nitrogen in some form (an equivalent of 900 pounds of 16-0-0) as a side dressing would have paid its way under fertilizer-price relationships existing in 1947. An average of only about 110 pounds of 16-0-0 was applied as a side dressing on the farms surveyed. It appears that side applications of this amount are far below the most profitable rates under current cost-price relationships. The data from the North Carolina experiments are presented only as an illustration of the problems of determining the most profitable rates of fertilizer application. Results obtained from different types of fertilizer used 1/ and rates of application depend much on type of soil, crop, and climatic conditions.

Proper placement of fertilizer in the soil is an important item in getting maximum yields from applications of fertilizers. This is particularly true in the case of phosphates which do not move readily in the soil after application. The proper combination of fertilizer and moisture is essential and this means getting the fertilizer somewhat below the surface and reasonably close to the seed. It is important also to obtain an adequate concentration of fertilizer in the root feeding area rather than to scatter the

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1/ For ways of computing relative costs of plant nutrients, see "Fertilizer Economics", p. 540; 1938 USDA Yearbook, Soils and Men.

phosphate throughout the soil mass. Doing these things helps to obtain more nearly normal response especially in seasons when there is a shortage of moisture. General recommendations for getting phosphate fertilizer applied in proper concentration near the plant root area apply also to irrigated crops and yet much of the phosphate used under Western irrigation conditions aside from that used on sugar beets is still applied as a surface treatment.

## Building Materials, Supplies and Containers

Prices of building materials, supplies and containers are expected to be steady to slightly higher in 1950 than in 1949. None of these commodities has decreased substantially in price in the past 6 months, and no such change appears likely. Supplies of these materials are expected to be adequate to meet requirements for agriculture through the present year.

Estimated lumber production in 1949 was about 10 percent lower than in 1948. December stocks were not appreciably different from a year earlier. But average wholesale prices for 1949 were about 10 percent lower than in 1948. The January 1950 price index was slightly higher than the 1949 average.

The new steel wage agreement was followed by an increase in steel prices of about $4 a ton. By using scrap steel in place of pig iron, steel makers kept operations at a high level despite the recent coal strike. Assuming no more serious work stoppages in the coal or steel industries, supplies of steel and steel products are expected to be sufficient to meet agricultural needs this year. Prices will probably be slightly higher than in 1949.

Total steel production for 1949 was more than 10 percent below production in 1948. However, the 1949 production was the third largest for any peacetime year. Items such as galvanized and cold rolled sheet and some types of pipe remained rather short in supply. However, there has been no critical lack of steel for agricultural production or grain storage.

Aluminum sheet and other aluminum products have become important in agriculture. Production for 1949 was almost the same as for 1948. Present demands are being met and adequate supplies of aluminum products for 1950 seem assured. No particular price changes have occurred in more than a year. None is expected in 1950.

Prices of cement have increased steadily and a continued but small price increase may be expected in 1950. Supplies are expected to be sufficient to meet all demands in 1950. New plants have been added recently and the industry has greatly improved old plants to increase their capacity. Production, stocks, and inventories have increased consistently and substantially the past 2 years. Production and shipments in 1949 were about 10 percent greater than in 1947. Stocks at the end of 1949 were 40 percent greater than 2 years earlier.

Prices of most kinds of containers probably will be about the same as at the close of 1949, or perhaps slightly higher. Nearly all kinds of containers are apparently in good supply to meet present and anticipated needs in agricultural production and marketing. The supply of new burlap bags is dependent on world political and economic conditions. Stocks were rather low at the end of 1949 but it is expected that farmers' needs will be met. With no serious world changes, the supply of both new and used bags will be adequate during 1950, at no increase in prices over 1949. Wood and fibre containers of importance to agriculture are expected to be in sufficient supply.

## Insecticides and Fungicides

Prices of insecticides and fungicides in 1950 are expected to remain substantially at the level that prevailed at the end of the 1949 season. Minor increases may result from changes in transportation charges and cost of specialized containers.

The production of insecticidal chemicals such as DDT and benzene hexachloride has been curtailed because of the coal shortage during the early part of 1950. If insects appear in more than average abundance during the 1950 season, supplies of some of the new insecticides may not be adequate to meet all the demands. Local shortages may occur under these conditions. Supplies of arsenical insecticides will be available in quantities sufficient to meet demands in 1950.

For the most part, however, materials needed to protect crops from insects and diseases during the coming season are expected to be available. Insecticides containing rotenone and pyrethrum are expected to be adequate. Insecticides containing Ryania which is used largely to control the European corn borer in canning corn will be available in larger quantities than last year, but the amount may not be sufficient to satisfy all demands.

Realizing the advantages of protecting their crops from pests, many farmers are beginning to order insecticides and fungicides well in advance of the season. For example, during the latter part of 1949 and the early part of 1950 farmers and dealers--particularly in the South--placed orders for insecticides they may need during the 1950 season. Some insecticides such as benzene hexachloride, toxaphene, and DDT mixtures that were available in rather limited supply last season have been stocked for use in the early part of the 1950 season. On this basis, it is fair to assume that the initial part of the insecticides needed to protect next season's crops from insects and plant diseases will be available to meet early season needs. To be prepared to protect their crops, it is important that farmers and local dealers determine as promptly as possible the kinds and quantities of insecticides that they anticipate will be needed, and place orders with their suppliers without delay. This is particularly true of some of the more complex modern compounds.

## Farm Land Values and Rentals

The 17 percent drop in net farm income in 1949 brought the first decline of the past 10 years in land values. After reaching a record peak in November 1948 which was 77 percent above the 1912-14 average and 113 percent above 1935-39, the national index of farm real estate values declined 1 percent by March 1949, and an additional 2 percent by July. These initial declines were more pronounced in the Mountain and Pacific Coast States than in other parts of the country. Values continued at or slightly above previous peaks in several of the North Central States throughout 1949. Present indications are that land values continued firm to slightly higher in many States from November 1949 to March 1950 but the level for the country as a whole this March was about 3 percent lower than a year ago. The decline in the Mountain and Pacific Coast States and in the Southeast have been somewhat larger than the national average.

The downward trend in prices received for most farm products in 1949, and the prospect that net farm income will continue to decline in 1950, has also changed the supply and demand aspects of the farm real estate market. Prospective buyers are now more inclined to shop around for a farm that will pay out over the long run. Location, condition of buildings and quality of land now receive more attention than in earlier years when prices of all grades of farms were rising sharply. Demand has slackened for the poorer farms, and sellers must usually drop their asking prices to make a sale. Demand continues strong for the better grades of land in the Corn Belt, however, but the supply for sale is limited. Present owners are not anxious to sell because returns from such land is likely to remain good even if farm income declines to expected levels.

Financing the purchase of farm land is not as easy as it was a few years ago. Lower farm income has not only tended to reduce the amount of cash prospective buyers have available for a down payment, but has also prompted many lenders to adopt a more conservative lending policy. Interest rates on new farm mortgage credit have increased slightly. Individual loan applications tend to be screened more carefully in an effort to eliminate the poorer risks.

Total volume of farm mortgage recordings in 1949 was slightly below 1948, mainly because of the smaller volume of sales. A higher proportion of all sales in 1949 were financed in part by credit. But the average amount loaned has remained fairly constant at between 50 and 55 percent of the purchase price. Federal credit agencies increased their volume of farm mortgage loans in 1949, but commercial banks were not as active as in past years.

The value of gross rental payments in 1949 was lower for the second consecutive year. Cash rents were about 2 percent higher than in 1948, but the value of crop share rents was 7 percent lower, and the total gross value of all rents was down by about the same amount. Expenses paid by landlords totaled only 2 percent less than in 1948. Farm real estate taxes on leased lands were about 8 percent higher while seed and insurance costs were also higher. Preliminary estimates show a net rental income in 1949 of about $1,843 million or 9 percent less than in 1948. This represents a net return of about 7.8 percent on an investment valued at $23.7 billion. Although this rate earned is slightly less than in previous years, it is still considerably higher than the interest rate on farm mortgages and nearly twice as high as the rate earned on leased land during pre-war years.

## Interest, Taxes, and Insurance

Interest payments - The amount of interest payments on the total farm debt will increase again in 1950. Such payments on short-term debt during 1950 probably will be about 5 percent greater than during 1949. This level of interest costs is from 70-80 percent higher than that for the war years 1941-45. Following the end of the war in 1945 the use of short-term credit expanded rapidly and by January 1, 1949 the outstanding debt was nearly 70 percent higher than on January 1, 1946. By January 1950 it was more than 80 percent higher than the 1946 level. However, during the past year the rate of increase has slackened appreciably. On the basis of meager data from the Federal agencies it appears that a curtailment has been made in the average size of loan. The number of farmers using short-term credit is as large if not larger than in the past several years. The rate of interest charged on short-term loans remains at about the level of last year.

Interest payments on farm-mortgage loans can be expected to show another rise during 1950 which probably will be in the neighborhood of 6 or 7 percent. The increase which occurred last year was about 5 percent. The present increase marks the fourth successive increase since interest payments were at a long-time low in 1946. It is estimated, however, that only about one-third of the farm owners have such loans and are making such payments, although the proportion is probably increasing.

Again the increase in interest payments on such farm mortgages will result from a further increase in the amount of loans outstanding. There is at present no evidence that interest rates will rise. Furthermore, some farm owners who originally borrowed for short terms and at relatively high rates are refinancing at longer terms and lower rates.

Taxes - Tax levies on farm real estate in 1949, which are payable largely in 1950, are expected to show about the same average percentage increase as they did in 1948, or about 8 percent. This will mark the fifth year in which the increase in such levies has equaled or exceeded 8 percent. As a result, the average levy per acre in 1949 will set a new all-time high, exceeding the previous one recorded in 1929.

The relatively sharp increases in farmers' property taxes in recent years have come about partly through increases in assessed values, but largely through higher tax rates. In some States, in fact, assessed values have changed little. Higher operating costs of State and local governments and a need for expanded public facilities, particularly schools and roads, have been the chief factors behind the demands for more revenue. In a few States, this problem has been met by resorting to taxes other than those on property, but in most States, real estate continues to bear a large share of the farmer's tax load.

Farmers, of course, are subject to other taxes and these also have been increasing. Many States tax personal property as well as real estate and in cases where exemptions are low, farmers pay substantial amounts. They also pay considerable sums in automotive taxes, particularly on motor fuel. Income tax payments are the only ones that have declined but they are still larger than farm real estate taxes.

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Insurance - Insurance held by farm mutual companies totaled almost $22 billion on January 1, 1950, after an increase of about 9 percent in 1949 and 12 percent in 1948, based on sample figures submitted by 288 companies. The decreased rate of increase from 1948 to 1949 was probably due largely to the leveling off in farm property values.

The losses of farmers paid from insurance carried with farm mutuals decreased in '49 for the first time since 1942, and were about 13 percent lower than in 1948. Losses per $100 of insurance averaged about 14 cents, or 20 percent below the average for 1948. The expenses of farm mutuals are comparatively low, averaging about 8 cents per $100 of insurance in 1949, or slightly lower than in 1948. Thus the total cost to farmers averaged about 22 cents per $100 of insurance in 1949, which was about 12 percent lower than in 1940.

The safety or reserve funds of farm mutuals have increased steadily for many years, due primarily to the continued increase in insurance in force. In 1949, such funds--which belong to farmers--averaged about 51 cents per $100 of insurance, or 5 percent higher than in 1948 and 11 percent higher than in 1947.

Federal crop insurance will be offered in approximately 625 counties in 1950, or about a 50 percent increase over the number of counties in which such insurance was offered in 1949.

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# THE Farm Cost SITUATION

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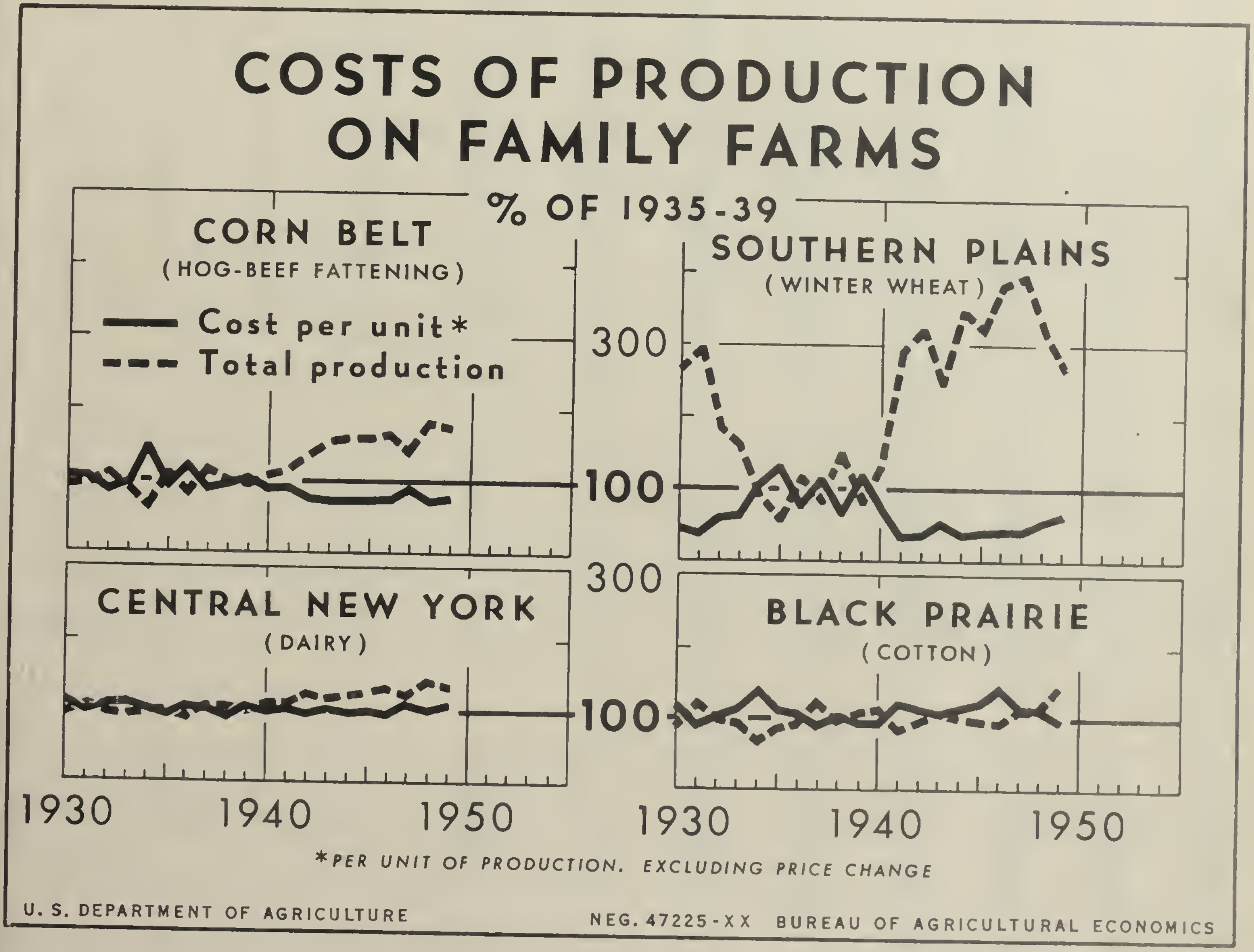

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U. S. DEPARTMENT OF AGRICULTURE NEG. 47225-XX BUREAU OF AGRICULTURAL ECONOMICS

Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | All commodities 1/ | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Fertilizer | Seed | Wage rates 2/ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 103 | 100 | 71 | --- | --- | 105 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 119 | 132 | 145 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 82 |
| 1935 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 105 |
| 1940 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| Jan. | 195 | 210 | 282 | --- | --- | --- | --- | --- | --- | --- | 364 |
| Feb. | 192 | 201 | 270 | --- | --- | --- | --- | --- | --- | 210 | --- |
| Mar. | 195 | 201 | 299 | 141 | 199 | 173 | 174 | 215 | --- | 206 | --- |
| Apr. | 195 | 200 | 297 | --- | --- | --- | --- | --- | 148 | 197 | 355 |
| May | 195 | 198 | 298 | --- | --- | --- | --- | --- | --- | 197 | --- |
| June | 193 | 192 | 290 | 141 | 200 | 178 | 176 | 210 | --- | --- | --- |
| July | 190 | 194 | 260 | --- | --- | --- | --- | --- | --- | --- | 355 |
| Aug. | 189 | 195 | 256 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 189 | 192 | 264 | 140 | 199 | 179 | 176 | 204 | 146 | 197 | --- |
| Oct. | 190 | 190 | 273 | --- | --- | --- | --- | --- | --- | --- | 342 |
| Nov. | 189 | 188 | 270 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 190 | 191 | 269 | 140 | 199 | 178 | 176 | 203 | --- | --- | --- |
| 1950 | | | | | | | | | | | |
| Jan. | 191 | 191 | 283 | --- | 199 | --- | --- | --- | --- | --- | 355 |
| Feb. | 191 | 190 | 294 | --- | --- | --- | --- | --- | --- | 197 | --- |
| Mar. | 193 | 191 | 306 | 140 | 198 | 178 | 175 | 206 | --- | 194 | --- |
| Apr. | 194 | 194 | 310 | --- | --- | --- | --- | --- | 141 | 194 | 353 |
| May | 198 | 204 | 326 | --- | --- | --- | --- | --- | --- | 194 | --- |
| June | 199 | 202 | 331 | 141 | --- | 179 | 176 | 211 | --- | --- | --- |
| July | 201 | 206 | 331 | --- | 198 | --- | --- | --- | --- | --- | 355 |
| Aug. | 201 | 207 | 327 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 202 | 203 | 340 | | | | | | 141 | 189 | --- |

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1/ Excluding wages.
2/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices", Bureau of Agricultural Economics, January 31, 1950.

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# THE FARM COST SITUATION

Approved by Outlook and Situation Board, October 26, 1950

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## GENERAL SITUATION

Total farm production expenditures will reach a record high in 1951, probably between 5 and 10 percent higher than in any other year. Expenditures in 1950 probably will equal the previous record high in 1948. They will be higher in 1951 because of higher cost rates and because farmers will tend to push for higher production to take advantage of higher prices.

Substantial increases are expected in 1951 for most major items of expenditure. Average prices paid for fertilizer in both the spring and fall seasons this year averaged lower than in the same seasons last year when they were the highest since World War I. They probably will average higher in 1951 than in 1950, but the increase is not expected to be as great as for some other production items.

Replacement costs of machinery, equipment, and buildings will be higher in 1951 than the average for 1950. Taxes and interest charges, costs of purchased feed and livestock, motor vehicle operation, hired labor, and many miscellaneous items also will be up. Despite these increased costs most farm operators are likely to have a favorable price-cost ratio in 1951.

Since 1947 cost rates have increased faster than prices of farm products. In 1947 the ratio of prices received to prices paid (including interest, taxes and wages) averaged about 115. By 1950 it had declined to about 100. It is expected to be above 100 in 1951 because prices of farm products are expected to strengthen as industrial activity and employment increase.

With some exceptions, particularly some kinds of insecticides and fungicides, and special supplies, production supplies are expected to be ample in 1951 to meet farmers needs. A few temporary seasonal and local shortages of some items may occur. It will pay farmers to plan early for 1951 and place orders early for materials and equipment needed.

During recent years of increasing cost rates, and smaller supplies of manpower and brisk demand for materials, farmers have improved production efficiency in order to keep unit costs at reasonable levels. In many instances, labor, power, and machinery requirements have been cut. Production per worker in agriculture is now about 40 percent higher than it was a little more than a decade ago.

Farm wage rates in 1949 averaged lower than in 1948. This was the first decline in wage rates since 1939. Farm wage rates for the country as a whole remained fairly stable during the first part of 1950. However, with the total labor market tightening, farm wage rates are expected to advance substantially as non-agricultural employment and wage rates rise. Demands for workers in industry will be greater next year and induction of man for military purposes will take prospective workers from agriculture and industry. In addition, demands for workers in agriculture will be greater next year. All these factors will tend to increase wage rates in 1951. Except for a few temporary local and seasonal spots, ample labor is expected to be available for farming needs in 1951.

Prices of farm machinery in 1951 are expected to reach a record high. Motor fuel, oil, tires, repairs and many other items connected with costs of operating machinery will average the highest in years.

Since July of 1950 the prospect of larger farm incomes has tended to increase the demand for farm machinery partly because of the prospect of higher machinery prices and the possibility of shortages. Current production of farm machinery has not kept pace with this demand because of material shortages and labor difficulties. Total output of machinery in 1950 is expected to be below the high production in 1948 and 1949. Plant capacity of the farm machinery industry is now greater than ever before, but some capacity will be used in 1951 in connection with the rearmament program, particularly later in 1951.

Dealers' stocks of machinery on January 1, 1950 were the largest since 1941. Production in 1951 probably will be at a high level unless raw material shortages develop. Adequate farm machinery is expected to be available to maintain farm production in 1951.

The general level of livestock and livestock product prices is now higher than a year ago. Returns per $1.00 of feed costs in 1950 were higher than a year ago for beef cattle and sheep, but lower for all other classes of livestock. However, returns were high compared with prewar for beef cattle, sheep and hogs but low for eggs and butterfat.

The supply of feed grains and other concentrates for the 1950-51 season totals about 180 million tons; a little less than the record supply of a year ago. The number of grain-consuming animal units is expected to be about 170 million; up a little from the previous year. The 1950-51 supply of concentrates per animal unit, therefore, will be about 4 percent lower than a year ago, but about 25 percent higher than the 1935-39 average.

Average feed costs are not expected to change much during the next six months, and it will still pay to feed meat animals enough protein to balance the ration. Quicker gains, better finished animals, and less grain per pound of gain usually result from reasonably well-balanced rations.

The cost of field seeds is expected to be somewhat lower this fall and next spring than during the past season. Total supplies are now considerably larger than a year earlier. The 1950 production of sweet clover seed, for example, is expected to be the largest in 11 years. Production of timothy was 60 percent higher than a year ago, and aggregate production of all cover crop seeds was 2½ times as large as last year.

Seed costs are becoming more important to farmers. Most seeds are now purchased whereas 10 or 15 years ago many seeds were home grown.

The average price of fertilizer will be higher next season than it was during the past season, but prices of farm products also are expected to be higher. It will still pay farmers to use more fertilizer than they have in the past. Farmers are now using about three times as much fertilizer as they did in 1935-39, and demand is likely to increase considerably for the 1951 crop.

Present fertilizer plant capacity is sufficient to produce slightly more plant nutrients in fertilizer than were applied during the past season. Plant capacity for nitrogen is sufficient to furnish 15 percent more than was available for use as fertilizer last year and also to take care of presently estimated non-agricultural demands. Approximately one million tons were available for fertilizer use last year. Plant capacity for phosphoric acid is sufficient to produce about 2.8 million tons; a little more than 2 million tons were available for use last year. Capacity for potash production is about 1.2 million tons. This is only about 100 thousand tons greater than was used as fertilizer last year. It is expected, however, that considerable tonnage might or could be imported.

Prices of building materials, supplies and containers have increased during 1950, and are expected to average slightly higher in 1951. Production, plant capacity and shipments of most of these items have continued to increase. Lumber production in 1950 probably will average about 10 percent higher than in 1949 and 3 percent higher than in 1948. Production in 1951 is expected to continue at about the 1950 rate unless military needs for men cause a shortage of manpower in the lumbering industry.

Rated capacity of the steel industry is about 4 percent higher than in 1949. Wire products are expected to be adequate for needs in 1951, but the supply of galvanized sheets will continue to be short. Production capacity in the cement industry has been increased. Supplies of cement are expected to be adequate in 1951 to meet needs, but the price will be high.

Supplies of wooden containers are expected to be adequate in 1951, but supplies of burlap bags, and cellophane bags may be short. Supplies of paper bags and other paper containers are expected to be adequate to meet agricultural needs and farmers may have to substitute these for burlap and cellophane bags.

Some increase is expected in prices of insecticides, fungicides, and weed killers during the 1951 season. Supplies of raw materials are low, particularly benzene and chlorine used in making DDT, benzene hexachloride, methoxychlor, various forms of 2,4-D, and certain fumigants. They probably will continue to be in short supply throughout the 1951 season. Supplies of pyrethrins also may be scarce.

Insecticides containing rotenone, Ryania and nicotine are expected to be available in adequate amounts. Sufficient fungicides probably will be available to meet essential needs.

Land values began to rise moderately early in 1950 probably because prospects for higher farm incomes were better than many buyers and sellers had expected. They continued to rise as the Nation's economic activity was stepped up and as farm product prices began to rise generally. By March 1951 land values probably will be as much as 10 percent higher than a year earlier.

Farm real estate dealers reported that for the year ending March 1950 about 40 percent of the farm purchasers paid cash, or at least no mortgage was recorded. When purchase financing involved a mortgage, down payments averaged between 45 and 50 percent of the purchase price.

Net rentals from farm land during the coming year are expected to continue favorable compared with alternative opportunities for investment. Capital gains taxes, however, will discourage land sales by persons intending to reinvest their funds.

There probably will be little or no increase during the coming year in interest rates paid on farm mortgages. Total interest charges on farm debt, however, will increase because of a larger debt load. Interest charges on farm mortgage-debt are expected to be about 7 percent higher in 1950 than they were in 1949. Interest charges on non-real-estate loans were about 80 percent higher in mid-1950 than in 1945.

Taxes levied by State and local governments against farm property reached an all time high in 1949, and a further increase is expected. Taxes per acre for the country as a whole are now almost 3 times what they were prior to World War I. They averaged 61 cents per acre in 1949 compared with

36 cents in 1943 when they were the lowest in many years. Tax rates on personal incomes also are higher now than a year ago.

Farmers' insurance premiums for fire and windstorm insurance probably will be greater in 1950 and 1951 than in 1949, not because of any appreciable increase in rates, but because farmers have tended to increase their insurance to cover their property values more adequately. Premiums paid by farmers in 1950 for hail insurance on growing crops amounted to about 10 percent less than in 1949, due chiefly to smaller amounts of insurance being carried. More farmers buy crop-hail insurance and they buy more of it in years when prices of farm products are high and prospects are good for high returns than when prospects for prices and returns are not good.

## Farm Labor

Farm wage rates in 1949 averaged lower than in 1948. This was the first drop in wage rates since 1939 and followed the big increase during the war and postwar years (table 1). Wage rates in 1950 are averaging about the same as in 1949, but are expected to average higher in 1951.

Several factors in prospect will tend to increase farm wage rates in 1951. The demand for workers in industry will be greater next year, and inductions of men for military purposes will take prospective workers from agriculture and industry. The need for farm workers to meet several labor peaks will be greater next year. For example, cotton production is likely to be stepped up considerably. This will increase the need for workers particularly during the spring chopping season and the late summer and fall harvesting season. Acreage and production of several other crops and numbers of some kinds of livestock probably will be greater in 1951.

As indicated in table 1, there are about 10 percent fewer workers on farms this year than in prewar years. Acres of many crops are down this year and with the plentiful supply of machinery on hand farmers generally are getting the work done in good season.

The supply of farm workers is expected to be tighter next year than in 1950. Many actual or potential farm workers will obtain jobs in industry. In addition, occupational deferments for men in the age group 19-25 years, inclusive, from induction into the armed forces are likely to be held to a minimum. Fewer available workers means that farmers will need to pay higher wages, particularly for experienced help.

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-50

(Index numbers 1935-39 = 100)

| Period or year | Farm employment | | | Gross farm production 2/ | | Farm wage rates 4/ | Ratio of farm wage rates to | |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | Total | Per worker 3/ | | Production per worker | Gross farm income per worker 5/ |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 103 | 108 | 108 | 107 | 99 | 101 |
| 1941 | 98 | 97 | 101 | 111 | 113 | 125 | 111 | 92 |
| 1942 | 98 | 97 | 101 | 123 | 126 | 163 | 129 | 90 |
| 1943 | 97 | 97 | 96 | 120 | 124 | 217 | 175 | 95 |
| 1944 | 95 | 97 | 88 | 124 | 131 | 263 | 201 | 108 |
| 1945 | 93 | 96 | 83 | 123 | 132 | 297 | 225 | 113 |
| 1946 | 95 | 98 | 85 | 126 | 133 | 320 | 241 | 108 |
| 1947 | 96 | 98 | 88 | 121 | 126 | 346 | 275 | 100 |
| 1948 | 95 | 96 | 91 | 131 | 138 | 365 | 264 | 103 |
| 1949 6/ | 92 | 93 | 89 | 129 | 140 | 354 | 253 | 106 |
| 1950 6/ | 90 | 91 | 85 | 125 | 139 | 354 | 255 | 104 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Simple average of quarterly indexes seasonally adjusted.
5/ Because of the increase in volume of production and the increase in the price of farm products, the gross farm income per worker has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1950.
6/ Preliminary.

Beginning January 1, 1951, some hired farm workers (essentially regular farm workers) will be covered by the Federal Social Security program. A farmer hiring workers covered under the new amendments to the Social Security Act will deduct $1\frac{1}{2}$ percent from the cash wages he pays these workers, and will add another $1\frac{1}{2}$ percent as his own contribution. This new coverage will mean a slight increase in hired labor costs for farmers employing workers who qualify. But since only a small part of the total number of hired farm workers will be covered, it will have little effect on average wage costs. [1]

The extent to which higher farm wage rates will affect labor costs per unit of output in 1951 will depend in part on what happens to the average production per worker. Gains in labor productivity can offset corresponding increases in wage rates. Production per worker has increased significantly during the last 15 years. This is due in a large part to the substitution of machinery for hand labor and the adoption of other technological improvements by farmers. During the last three years labor productivity has averaged nearly 40 percent higher than in the prewar period, 1935-39.

## Farm Power and Machinery

Farm power and machinery costs in 1951 are expected to be even higher than the record high of 1950. Retail prices of machinery are expected to be higher than in any previous year. Retail prices of gasoline will be the highest in years, and prices of tires in 1951 will be higher than the 1950 prices. The cost per head of keeping workstock will rise mostly because of higher feed prices, but probably will be below the record high costs of 1948 and 1947.

Prices of farm machinery in the first half of 1950 were about the same as the peak prices of 1949, but in the last half of 1950 there were moderate increases. Consequently, they will average slightly higher this year than last.

Reduced farm incomes during the first half of 1950 along with the relatively high machinery prices were contributing factors toward lower purchases of machinery than for the same period in 1948 and 1949. For the most part shortages arising out of the war and early postwar period had been met. Demand for farm machinery has increased since last July partly because of expected higher prices of farm products, larger farm incomes, and perhaps some forward buying. Current production of machinery has not kept pace with this demand because of material shortages and labor difficulties. Even with increased production since July, total machinery output in 1950 is expected to be somewhat below the high production of 1948 and 1949.

Demand for farm machinery probably will continue at a high level because of prospectively higher farm incomes. Prices of farm machinery will be higher as manufacturers are faced with higher costs of materials and labor. Output also may be restricted, particularly in the latter half of the year, by material shortages resulting from the rearmament program. Production in 1951 probably will be at levels sufficiently high to maintain farm production at expected levels, but shortages of some of the newer machines might be experienced.

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[1] For more information regarding the new Social Security coverage of farm workers see "The Agricultural Situation", Bureau of Agricultural Economics, U.S. Department of Agriculture, October 1950 or contact your Social Security Office, Post Office, or County Agricultural Agent.

Most items of farm machinery were in adequate supply in the first half of 1950, and dealers' stocks on January 1, 1950 were larger than for any year since 1941. Since July, production of some kinds of machinery has not kept pace with the higher demand, and it is expected that dealers' stocks on January 1, 1951 will be lower than the large stocks on January 1, 1950. Plant capacity of the farm machinery industry is now greater than ever before, but some of this capacity may be used for the rearmament program in 1951.

Exports of farm machinery in the first half of 1950 were about a fifth below the high exports in the same period in 1948 and 1949. The decline largely reflects expansion of production in foreign countries and dollar shortages in importing countries. There are also some indications that the backlog of orders has about been filled in many countries.

Purchases of machinery by farmers in this country have been relatively large each year for the past decade except for 1943 when manufacture was reduced drastically by Government limitations during the war. At the beginning of 1950 tractors on farms exclusive of garden types were estimated at 3,550,000. This figure compares with 1,545,000 for January 1, 1940. Garden tractors on farms January 1, 1950 were estimated at 275,000. There were only a few garden tractors on farms a decade earlier.

The total volume of machinery and equipment other than tractors and motor vehicles on farms January 1, 1950 was more than double that of 1940 (table 2). Horse and mule numbers on farms January 1, 1950, however, were only about half of the 1940 number and about one-third of the 1920 number. Percentage declines in numbers of work animals in recent years have been the heaviest on record. One-fourth as many colts were raised in 1949 as in 1940 and only about one-tenth as many as in 1920. Prices of horses and mules are now the lowest in years and further heavy reductions in horse and mule numbers and in size of the colt crop appear likely.

Numbers of automobiles and motortrucks on farms are now at peak levels. There were about 5,800,000 automobiles on farms January 1, 1950. This is about 40 percent more than there were 10 years earlier. Numbers of motortrucks on farms January 1, 1950 were estimated at 2,200,000; more than double the number in 1940.

Automobile production in 1950 will be the largest on record, and farmers have been large purchasers. Supplies of small size motortrucks are adequate in most parts of the country. It seems certain, therefore, that numbers of farm automobiles and motortrucks on farms January 1, 1951 will show a further large increase.

## Table 2.- Horses and mules and tractors on farms and cost of keeping horses and mules and of using farm tractors, United States, 1940-49 1/

(Index numbers 1935-39 = 100)

| Calendar year or period | Tractors on farms, number January 1 | Horses and mules on farms, number all ages January 1 | Colts under 1 year on farms, number January 1 | Horses and mules all ages, value per head January 1 | Feed cost per head 2/ | Prices paid by farmers for: New tractors 3/ | Prices paid by farmers for: Gasoline | Prices paid by farmers for: Tires 6.00 x 16 |
|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1940 | 124 | 92 | 101 | 90 | 94 | 96 | 95 | 92 |
| 1941 | 135 | 90 | 98 | 81 | 104 | 101 | 99 | 95 |
| 1942 | 152 | 87 | 85 | 78 | 132 | 102 | 103 | 117 |
| 1943 | 169 | 84 | 69 | 95 | 174 | 99 | 103 | 130 |
| 1944 | 178 | 80 | 62 | 98 | 196 | 111 | 103 | 136 |
| 1945 | 195 | 76 | 54 | 86 | 192 | 113 | 103 | 131 |
| 1946 | 208 | 70 | 41 | 80 | 221 | 126 | 106 | 133 |
| 1947 | 225 | 64 | 35 | 84 | 283 | 142 | 118 | 127 |
| 1948 | 253 | 58 | 31 | 79 | 297 | 158 | 131 | 128 |
| 1949 | 281 | 52 | 27 | 72 | 230 | 174 | 134 | 124 |
| 1950 | 4/ 307 | 47 | 22 | 63 | 5/ 235 | 6/ 173 | 7/ 134 | 7/ 125 |

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1/ The 1935-39 averages were: horses and mules all ages, 15,750,000 head; value per head, $97.68; feed cost per head, $39.34; colts under one year of age 744,000 head; tractors, 1,244,000; prices paid by farmers for new tractors, $1,106; gasoline $0.19; and tires, $12.70.

2/ Based on 25 bushels each of oats and corn and 2 tons of loose hay.

3/ Tractor prices are for medium size (20-29 BHP) wheel tractor equipped with rubber tires.

4/ Preliminary estimates.

5/ Average of the first 8 months.

6/ Average prices paid in March.

7/ Average prices paid in March and June.

Motor fuels have become one of the most important requirements in farm production. Farmers now use more petroleum fuels than ever before. Along with the increase in power machinery, there have been large increases in use of petroleum fuels in the farm household and for miscellaneous farm uses such as brooding chickens, dehydrating crops, etc. Total consumption of liquid petroleum fuels in 1951, including the LP-gases, likely will be about 10 billion gallons. This is about 10 times the consumption in 1920 and more than double that in 1940. At present almost 80 percent of the used fuel is by motors and probably 70 percent of this is gasoline.

## Feed

The supply of feed grains and other concentrates for the 1950-51 season totals about 180 million tons, a little less than the record supply of a year ago. The carryover of old grain is a little larger and production of feed grains a little less. The total supply of high protein feeds will be about the same as a year ago. A sharp decrease in cottonseed meal has been offset by a record supply of soybean meal. The supply of mill feeds and other by-products feeds will be about the same as last year. It also seems probable that considerable quantities of low grade Canadian wheat may become available for feed.

The number of grain-consuming animal units in 1950-51 is expected to be about 170 million, a little higher than last year. The supply of feed concentrates available for feed is 49 percent above the 1935-39 average whereas the index of grain-consuming animal units is 19 percent above the base period. Thus the index of supply of feed concentrate per animal unit is 4 percent less than last year, but 25 percent above the 1935-39 average (table 3).

The supply of hay per animal unit is the greatest on record and the total supply (122 million tons) is next to the largest.

Prices of livestock and livestock products averaged higher this September than a year ago. This was largely due to an increase in the price of beef cattle, hogs and sheep. Prices of eggs, butterfat and milk were below those of a year ago.

Returns per $1.00 of feed costs were higher in September than a year ago for beef cattle and sheep, but lower for all other classes of livestock (table 4). However, returns were relatively high for beef cattle, sheep and hogs, and low for eggs and butterfat. Returns from chickens in relation to feed costs are below prewar, but the great expansion of the commercial broiler industry in recent years indicates that chicken meat is now produced more profitably than before the war.

Average feed costs for the next six months are not expected to change much from the present level which is somewhat higher than a year ago. Corn may decline seasonally in the next month or two and then rise toward support

Table 3.- Relation of supply of concentrates available for feed to number of livestock 1930-50

(Index numbers 1935-36 to 1939-40 = 100)

| Feeding year | Supply of feed concentrates available for feed 1/ | Animal units of grain consuming livestock fed in year 2/ | Supply of feed per animal unit 3/ |
|---|---|---|---|
| | Percent | Percent | Percent |
| 1930-31 to 1934-35 | 97 | 105 | 92 |
| 1935-36 to 1939-40 | 100 | 100 | 100 |
| 1940-41 | 120 | 109 | 110 |
| 1941-42 | 128 | 117 | 109 |
| 1942-43 | 148 | 134 | 110 |
| 1943-44 | 141 | 135 | 104 |
| 1944-45 | 132 | 121 | 109 |
| 1945-46 | 131 | 117 | 112 |
| 1946-47 | 130 | 113 | 115 |
| 1947-48 | 112 | 109 | 103 |
| 1948-49 | 141 | 113 | 125 |
| 1949-50 | 153 | 118 | 130 |
| 1950-51 4/ | 149 | 119 | 125 |

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1/ Supply of concentrates year beginning October less quantity used for industry, food, seed, and exports.
2/ Animal units fed in year beginning October.
3/ Column 1 divided by column 2.
4/ Tentative estimate.

Table 4.- Returns per $1.00 of feed cost, United States, September 15, 1950, with comparisons 1/

| Item | 1935-39 average | September 15, 1949 | March 15, 1950 | September 15, 1950 |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.72 | 2.16 | 1.33 | 1.56 |
| Chickens | 1.84 | 1.56 | 1.75 | 1.47 |
| Milk | 1.92 | 1.95 | 1.82 | 1.89 |
| Butterfat | 1.55 | 1.42 | 1.42 | 1.37 |
| Hogs | 1.50 | 2.03 | 1.65 | 1.80 |
| Beef | 1.39 | 2.01 | 2.11 | 2.35 |
| Sheep | 1.44 | 1.57 | 1.67 | 1.92 |
| | (Index numbers 1935-39 = 100) | | | |
| | Percent | Percent | Percent | Percent |
| Eggs | 100 | 126 | 77 | 91 |
| Chickens | 100 | 85 | 95 | 80 |
| Milkq | 100 | 102 | 95 | 98 |
| Butterfat | 100 | 92 | 92 | 88 |
| Hogs | 100 | 135 | 110 | 120 |
| Beef | 100 | 145 | 152 | 169 |
| Sheep | 100 | 109 | 116 | 133 |

1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of poultry ration per pound of chicken; 7½ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lamb. It was assumed that for each 100 pounds of sheep and lamb produced 20 pounds of wool was produced from the same feed. The quantity of hay for milk cows, beef cattle and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost 1/4 as much per pound as they would if obtained from hay.

Table 5.- Average prices of feeds in the United States, September 15, 1950 with comparisons

| Item | Unit | September 15, 1949 | March 15, 1950 | September 15, 1950 |
|---|---|---|---|---|
| Prices received by farmers | | | | |
| Corn | Bushels | $ 1.16 | $ 1.19 | $ 1.44 |
| Oats | do. | .61 | .72 | .73 |
| Barley | do. | 1.05 | 1.10 | 1.14 |
| Sorghum grain | Cwt. | 1.80 | 1.93 | 1.77 |
| Hay, baled | Ton | 21.00 | 21.20 | 20.30 |
| Fed grains and hay, Index number (1935-39 = 100) | | 175 | 183 | 204 |
| Prices paid by farmers | | | | |
| Mixed dairy feed 16% | Cwt. | 3.43 | 3.41 | 3.64 |
| Laying mash | do. | 4.53 | 4.34 | 4.60 |
| Cottonseed meal | do. | 3.90 | 3.74 | 4.35 |
| Soybean meal | do. | 5.16 | 4.11 | 4.44 |
| Linseed meal | do. | 4.08 | 4.26 | 4.34 |
| Meat scrap | do. | 7.14 | 6.15 | 6.75 |
| Bran | do. | 2.84 | 2.86 | 3.08 |
| Middlings | do. | 3.06 | 3.00 | 3.28 |
| Alfalfa hay, baled | Ton | 30.40 | 31.80 | 29.60 |
| Prices paid by farmers for feed, Index number (1935-39 = 100) | | 202 | 190 | 213 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | |
| Fed to poultry | Cwt. | 3.46 | 3.40 | 3.68 |
| Fed to milk cows in milk selling areas | do. | 3.01 | 3.04 | 3.21 |
| Fed to milk cows in cream selling areas | do. | 2.59 | 2.65 | 2.84 |

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1/ Value of the corn, oats, oil meal, milk feed, commercial mixed feed, etc. making up 100 pounds of "grain" ration.

levels. Although corn is one-fourth higher in price than a year ago, the average costs of poultry and dairy rations are less than 10 percent higher than in September 1949 (table 5). Soybean meal and meat scrap are much lower in price than a year ago. Cottonseed meal, however, is considerably higher, especially in the South Central States. This will affect feed costs of dairy and beef cattle in the South and Southwest.

Prices of mixed dairy feeds are considerably higher than a year ago in the South but poultry mashes show less increase. Meat scrap prices are lower than a year earlier especially in the South and West. However, they are still higher than average compared with soybean meal. The increased use of synthetic vitamin $B_{12}$ in poultry and hog feeds will tend to cause tankage, meat scrap and fish meal to be priced more in line with soybean meal, taking into account the difference in protein content.

Even though there is a large supply of corn, it will pay to feed meat animals enough protein to balance the ration. Quicker gains, better finished animals and less grain per pound of gain usually result from feeding a reasonably well-balanced ration. It probably will pay to feed hogs to moderately heavy weights this winter because prices of pork and lard are expected to hold up well. Prices of pork and lard are higher now than a year ago, but probably will show their usual seasonal decline this fall. It will pay to feed dairy cows in milk selling areas about as heavy as last year. It has not been profitable in the cream selling areas to feed cows a heavy grain ration in 1950, and it will be even less profitable in 1951. Thee relatively low price of milk in areas where butterfat is the principal outlet and the high price of veal calves suggests that it may be profitable for some farmers in these areas to partly fatten dairy calves for veal on whole milk.

Egg production is now less profitable than a year ago and may become still less profitable. The commercial producer, however, cannot reduce his costs per dozen by feeding less per head, or by feeding lower quality feed because either of these practices probably will reduce egg production per hen more than it reduces cost. The egg producer does not have the flexibility in rate of feeding that is available to most other livestock producers.

Prices of feeder cattle have been considerably higher this fall than a year ago, and prices of fat cattle in 1951 are not expected to be much higher than in 1950. As a result, profits from this season's operations will depend more than usual on good feeding practices.

## Seeds

The costs of grass and legume are expected to be lower this fall and next spring than during the past season. Total supplies are now considerably larger than a year earlier. A few seeds will cost more but retail prices of the important field seeds averaged 4 percent lower in mid-September than a year earlier.

Prices of some seeds are much lower than last fall. At that time the retail price of timothy seed was at the record high level of 28.8 cents a pound following the short 1949 crop. Production of timothy seed was 60 percent higher in 1950 than in 1949 and as a result the retail price is now about 30 percent lower than a year ago.

Prices of cover crop seeds, particularly the vetches and blue lupine, are down sharply. Aggregate production of all cover crop seeds in 1950 was $2\frac{1}{2}$ times as large as last year and 3 times the 1944-48 average.

Larger supplies of smooth brome, crested wheat grass and common ryegrass also are reflected in lower prices this fall. Supplies of ladino clover seed are at a new high level. More than twice as much ladino clover seed was harvested in 1950 as in any previous year.

The 1950 production of sweet clover seed is expected to be the largest in 11 years while supplies of red-clover seed, including the crop expected to be harvested this year, are 48 percent larger than in 1949 and 18 percent larger than the 1939-48 average.

Among the field seeds for which costs are higher now than a year ago are alsike and white clover, Kentucky bluegrass, orchard grass and seed grains. Current supplies of alsike-clover seed are 5 percent smaller than the 1939-48 average. Some farmers who normally produce white-clover seed grew ladino clover this year. This largely accounts for the changes in supplies of these two seeds.

Changes in market prices of seeds do not explain all of the changes in expenditures for seeds. For years there has been a trend toward the use of purchased seeds and away from the use of homegrown seeds. The farmer who plants hybrid seed corn may have a total cash outlay of upwards of $100 for seed corn. Formerly there was little or no direct cash outlay. The substitution of certified seed for homegrown seed might increase the cost of raising an acre of potatoes by as much as $25 or more. A bushel of certified seed wheat, oats or barley often costs twice as much as the price of a bushel of grain harvested from that seed. The difference is even greater in the case of cotton seed.

In many situations it pays well to buy seed rather than plant seed grown on the farm, but the additional cost is a factor tending to increase total expenditure.

## Fertilizer

In contrast with the index of prices paid for all goods and services used in production on farms, the price of fertilizer during the spring and fall seasons of 1950 was slightly lower than for the same periods in 1949. Despite somewhat higher prices for fertilizer next year, higher prices for farm products during 1951 are expected to make it profitable for farmers to increase the use of fertilizers at a more rapid rate than they have during the past few years. Even under less favorable relationships between prices of farm products and fertilizers, farmers ordinarily have used less fertilizer than would have been most profitable. Some of the intensively grown fruits and vegetables are adequately fertilized.

The quantity of plant nutrients in fertilizers available for use by farmers during the 1949-50 crop season was about 3 times the 1935-39 average. The use of fertilizer has risen steadily since the depression years. No doubt most of the increase in tonnage used is accounted for by use on additional land rather than by increased rates per acre, although the latter has been an important factor. Quantities of nitrogen and phosphoric acid used as fertilizer are now about 3 times the amounts used in 1935-39. The use of potash as fertilizer has increased slightly more; approximately 3.1 times the 1935-39 average.

Plant capacity for production of nitrogen is sufficient to furnish 15 percent more than was available for use as fertilizer last year and also to take care of presently estimated non-agricultural demands. Approximately one million tons were available for fertilizer use last year.

There is installed capacity within the industry to produce approximately 2.8 million tons of available phosphoric acid. A little more than 2 million tons were available for use as fertilizer last year. Probably the only immediate problem in the way of full scale production of superphosphates is the lack of adequate supplies of sulfuric acid.

Present capacity for potash production in this country is about 1.2 million tons. This is only about 100,000 tons greater than was used as fertilizer last year. But it is expected that during 1950-51 a considerable tonnage of French and Spanish potash will be imported, plus additional tonnage from Western Germany.

The use of commercial plant nutrients has increased at an average rate of about 10 percent per year for the past several years. With continued favorable farm-product-fertilizer price relationships, a larger increase might be expected for 1951 if supplies were available. Current prospects regarding available supplies would mean a fertilizer consumption of 4.6 million tons of plant nutrients in 1951 compared with 4.2 million tons in 1950, or an increase of 10 percent. Estimates of desirable applications on cropland and pasture indicate that much more than a 10 percent increase could be used profitably.

Not only is there room for profitable expansion in use on additional acres, but current rates of application per acre on food and feed grain crops and on hay and pasture are generally well below the rates that would be most profitable. Although the percentage of the acreage of different crops receiving applications has increased during the past several years, considerably less than one-fourth of the total cropland is fertilized with these materials. Less than 4 percent of the pasture land in the humid regions receives fertilizer applications currently.

Estimates of desirable production adjustments and practices, developed in 1944 in cooperation with State agricultural committees, indicated that under conditions of agricultural prosperity it would be profitable to apply fertilizers on 40 percent of the cropland, and on about 35 percent of the pasture land in the humid regions. If the rate of application per acre were increased one-third (except for cotton, vegetables, potatoes and tobacco) such applications would require about 30 million tons of fertilizer containing nearly 6 1/3 million tons of plant nutrients. Such a level of use would represent an increase of 50 percent over total quantities used last year. The use of nitrogen, phosphoric acid and potash would be 1.5, 3.2, and 1.6 million tons, respectively. Last year farmers used 1.0, 2.1, and 1.1 million tons of these three plant nutrients in the order named above or a total of 4.2 million tons.

Recent results of fertilizer use on some crops, notably corn, indicate that rates most generally used are much lower than would be profitable. Recent surveys indicate that farmers who fertilize corn apply about 185 pounds per acre. More fertilizer is used on corn than on any other crop. Nearly one-fourth of all fertilizer is used on this crop. If rates per acre on corn were increased one-third, which would appear conservative enough in view of experimental results, it would increase the use of fertilizer approximately one million tons.

## Building Materials, Supplies and Containers

Prices of building materials, supplies and containers have increased in 1950 as compared with 1949. These higher prices are the result of the record high level of building and increasing level of business activity in most lines. Meanwhile plant capacity and shipments of most of these items also have continued to increase. No new and severe shortages appear likely for 1951 unless the defense program is stepped up a great deal more than expected.

Lumber production in 1949 was almost 7 percent lower than in 1948, but 1950 production probably will be 3 percent higher than in 1948, or 10 percent higher than in 1949. This rate of production seems likely to continue during 1951 unless military needs for men cause a labor shortage in the lumbering industry. There has been no significant change in mill or dealers' stocks the past two years. Prices continued to rise substantially in 1950 to an all time high in August, with little decline since. The volume of lumber supplies available for agricultural use will depend on the needs for lumber for military purposes, and the effect of revised governmental policy on residential housing construction. No substantial easing of supplies or decrease in lumber prices seems likely in 1951.

Total rated capacity of the steel industry has been increased about 4 percent over 1949 and production was much nearer capacity in the first half of 1950 than during the previous year. Shipments have likewise continued to increase. Supplies of wire products probably will be adequate, but the supply of galvanized sheets will continue to be short.

Prices of some steel products have continued steady but others have increased slightly. Prices of all steel products may increase further in the near future. Any great increase in needs for the defense program would also accelerate the trend to higher prices and might cause actual shortages of some items.

During the first 9 months of 1950 aluminum production continued to increase over a year earlier. There has been no appreciable change in price. Some forward buying after fighting started in Korea caused shortages in some areas. As military needs increase less aluminum will be available for farm needs.

The present situation in the cement industry is much like that in the steel industry. Capacity and shipments have increased. At the same time production costs and prices have increased steadily. By 1951 there should be no difficulty obtaining needed cement, but prices probably will be higher.

Wooden container supplies seem adequate to meet reasonable demands and no change in price is expected. Any shortage would likely be the result of a more basic lack of sufficient lumber production, rather than a lack of plant capacity in the container industry. Short crops in 1950 of peaches, strawberries, etc., have resulted in a carryover of veneer baskets, hampers, and packages which is larger than usual.

Two classes of containers seem likely to be in short supply. Transparent wrappings, such as cellophane and pliofilm, may be in short supply because the raw materials are allocated to other uses in the defense program. Jute stocks in Calcutta June 30, 1950 were less than 40 percent as much as for the previous two years. As a result, it is almost certain that the price of burlap will continue high, and shortages may develop. Some of this shortage can be taken up by other textile bags and paper bags at slight increases in prices for them.

Production of paper and paperboard has been at a high rate in 1950. Supplies of paper bags and other paper containers are expected to be adequate for all agricultural needs in 1951.

## Insecticides and Fungicides

Some increase is expected in prices of insecticides and fungicides during the 1951 season. This will reflect increased cost of labor, transportation and packaging, and higher costs of raw materials. Prices are expected to be reasonably well stabilized by the beginning of the 1951 season and probably will change little after that for the remainder of the season.

The carryover of insecticides and fungicides on September 30, 1950 was the lowest in the past 3 years. Carryover was about normal in the Northern Plains and western Corn Belt States, but was very low in the southeastern and New England States. Carryover of arsenicals and pyrethrins were low in most areas.

Supplies of raw materials are low, particularly benzene and chlorine used in making DDT, benzene hexachloride, methoxychlor, various forms of 2,4-D, and certain fumigants. They probably will continue to be in short supply throughout the 1951 season. Special efforts are being made by the industry and associated groups to increase the production of these materials and to make them available for use in agricultural pesticides. But even so, the quantity that will be available next season probably will be less than the amount used during the 1950 season. Supplies of raw materials used in arsenicals and sulphur and copper compounds used in manufacturing fungicides are about normal.

Insecticides containing rotenone, Ryania and nicotine are expected to be available in adequate amounts. However, those insecticides containing pyrethrins may be scarce. Sufficient fungicides probably will be available to meet essential needs.

In view of the low stocks, particularly of insecticides in the Southeast, and the expected increase in cotton acreage for 1951, supplies of the preferred insecticides may be insufficient to meet the needs in that area. In planning their pest control program, farmers should not depend too heavily upon specific kinds of materials likely to be in short supply. This is especially true of insecticides containing benzene and chlorine. Other effective materials, such as arsenicals, will be available and can be used in place of the newer type insecticides.

## Farm Land Values and Rentals

Land values are expected to show continued strength during the coming year. Average values for the country as a whole are now probably around 5 percent higher than last March, and a further increase of about the same amount is expected by next March. This increase would bring the U. S. average value to a level somewhat above the previous record peak reached in November 1948 when U. S. land values were 177 percent of the 1912-14 average and 213 percent of the 1935-39 average. The outlook for higher farm incomes in 1950-51, together with inflation hedge purchases is likely to result in continued strong demand for land. Net rental returns from farm land during the coming year are expected to continue favorable as compared with alternative investment opportunities.

Land values began to rise moderately in early 1950 as a result of farm incomes apparently stabilizing at higher levels than many prospective buyers and sellers had expected. The United States index of values rose about 1 percent from November 1949 to March 1950. Land values continued to rise during the following 4 months in response to high levels of economic activity and generally rising prices for farm products. By July 1950, land values were up 2 percent from March and had returned to the level of a year earlier.

The Korean developments gave further impetus to strengthening of the land market. The largest increases in land values since July 1950 have been in the Corn Belt and Great Plains States, where recent developments have increased income expectations.

The number of farm transfers during the current year probably will continue at approximately the same rate or slightly lower for the 12 months ending last March, when the volume of voluntary sales was about midway between the prewar average and the 1946-47 peak. Voluntary sales for the 12 months ending in March 1950 were at the rate of 37 sales per 1,000 farms, a level about 9 percent below the previous year. The increased demand for farms by investors and farmers will be largely offset by the hesitancy of most present owners to sell even at slightly higher prices. Many farm real estate dealers report that the number of farm listings for sale is quite limited. Some reports indicate that the number of listings has decreased since the conflict in Korea began. Forced sales and foreclosures continue to be negligible in importance and the transfers by gift and inheritance continue at a relatively stable rate.

Preliminary indications from a survey of farm real estate dealers and others this October give a clue to recent trends in prices of real estate. About one-third of the dealers reported that prices this October were higher than in March, three-fifths reported prices the same and less than one-tenth reported lower prices in October than in March. Geographically, the proportion of dealers reporting increases in land price was highest (over two-fifths) in the Midwest and lowest (one-fifth) in the Northeastern States. Roughly one-fourth of the dealers in the Western States reported increases in prices and one-tenth reported prices to be lower now than in March.

In response to the question "What changes, if any, do you expect in selling prices of farm land during the next six months" dealers' replies indicated that less than one-third expected land prices to increase, three-fifths expected little change and 10 percent expected land prices to fall. The highest proportion of dealers who expected an increase was in the North Central and Great Plains areas where about one-third of those replying expected increases in land prices. In the Western States, one-fourth of the dealers expected prices of land to rise, over two-thirds expected little change and about one-tenth expected some decrease in land values.

Lending agencies have been following a relatively conservative policy in financing farm purchases. For the year ending last March, farm real estate dealers reported that about 40 percent of the purchasers of farms paid cash, or at least the transaction did not involve a real estate mortgage. When purchase financing involved a mortgage, down payments averaged between 45 and 50 percent of the purchase price. Dealers report that the relatively conservative lending practices of the major lenders continue to have a moderating influence on sales prices and the volume of farm transfers. Although there may be some tendency toward more credit financing, no substantial change in this direction is expected in 1950-51.

## Interest, Taxes, and Insurance

Interest payments - Interest charges on the total farm debt will again increase in 1951. In the fall of 1950 interest charges on non-real-estate farm debt are at the highest level in about two decades. This relatively high level probably will continue into 1951.

Interest charges paid by farm owners on their farm-mortgage debt are expected to be about 7 percent higher in 1950 than they were in 1949. Nearly all of this increase is due to an increase in the amount of the farm-mortgage debt. The average interest rate has not changed during this period. There are some indications that the mortgage debt may increase more during the last half of 1950 than during this period in recent years.

Interest charges on non-real-estate farm debt in mid-1950 as reflected in the amount of such debt owed to commercial banks and federally sponsored agencies, were more than 80 percent higher than at the war's end in 1945. During this period, the Corn Belt States all had increases of over 100 percent, ranging from 107 percent in Iowa to 143 percent in Ohio. Non-real-estate debt also was more than double in the Middle Atlantic States, Michigan, Wisconsin, and a few scattered States in the remainder of the United States. In North Dakota and South Dakota the net change in debt between 1945 and 1950 was small. Liquidation of old emergency crop and feed loans and other loans of the Farmers Home Administration carried over from the drought and depression days about offset the new debt incurred from banks and production credit associations. The increase of 58 percent in New England was the smallest for any region.

Non-real-estate farm loans of the major lending institutions increased about 5 percent during the year ended June 30, 1950. This was a much smaller increase than prevailed during the first 3 postwar years. Declines occurred in the West South Central and Pacific regions and in 13 other States. Debt increases of 10 percent or more were recorded during the year ended June 30, 1950 in the East and West North Central regions.

Non-real-estate farm debt has risen sharply since June, largely as a result of the Korean war. Demand for credit for consumer purchases, already high, has been greatly accelerated. Also, fear of shortages and the favorable prospects for agricultural prices have stimulated the use of credit for capital goods expenditures. Many of these recent expenditures have been made at higher prices. In the Midwest advancing prices and heavy purchases of feeder cattle have contributed to the credit expansion.

No significant changes have occurred recently in interest rates of individual lenders. It is possible, however, that during the recent boom in consumer credit there may have been an increase in the proportion of borrowers who have obtained credit from the high-rate lenders such as sales finance companies. Nevertheless the volume of non-real-estate debt continues to be the main factor affecting the amount of interest paid by farmers on such debt.

Taxes - Taxes levied by State and local governments against farm property in 1949, and payable largely in 1950, reached an all time high level. They are expected to increase further in 1950 and will be reflected in payments made largely in 1951. Farm real estate levies in 1949 are estimated to have totaled 699 million dollars and those on farm personal property 124 million dollars. The combined total of 823 million dollars compares with 766 million in 1948, 705 million in 1947, and a previous high of 641 million in 1929.

Taxes levied on farm real estate when expressed as a per acre figure, as they are for parity purposes, amounted to $.61 in 1949. This is well above the average of $.57 reported for 1948 and the previous high of $.58 in 1928 and 1929. They had been as low as $.36 in 1943. Taxes per acre in 1949 were higher than they have ever been in 25 States, and were as high in 5 others, but in 9 States they were 75 percent or less of their previous highest points. With few exceptions, the States in which governmental units now levy substantially lower property taxes than they did during their peak years are among those that have adopted either income taxes or sales taxes as supplementary sources of revenue.

The highest per acre taxes levied on farm real estate in 1949 were in the New England, Middle Atlantic, and East North Central regions. Generally speaking, the lowest taxes were those levied in the Mountain and Southern States. In 8 of these States the per acre levy in 1949 was less than $.25, with New Mexico which has large acreages of low value range land having a low of about $.07.

The index of taxes levied per acre for the country as a whole in 1949 was 296 (1909-13=100), nearly three times the base period. For 1948 the index was 275 and at the previous peak in 1929 it was 281. For all of the New England States and for 9 others scattered throughout the country, the index shows that taxes levied in 1949 were at least four times what they were in the base period.

The higher property tax levies in recent years have been made necessary largely by the general increase in costs of operating local governments, particularly salaries and wages, materials and supplies. The expansion of existing facilities and, to some extent, the addition of new services also have been influential in the generally sharp rise in taxes. Schools have been the biggest item in most governmental programs for expanding facilities but roads have been taking a significant share of the tax dollar of State and local governments. Despite higher incomes and employment, welfare costs also have continued to rise and a few States are providing a bonus for veterans of World War II through property taxation. These high expenditures are being met by increasing property tax rates, raising the level of assessments, and adding new properties to the tax rolls.

In addition to those on property, farmers pay other taxes either directly or indirectly. Only a few of these, however, can be readily measured. Farmers pay considerable amounts in automotive taxes either for licenses and permits or as an excise tax on motor fuel purchased. Preliminary estimates for 1949 indicate that such tax payments may have exceeded 350 million dollars. Data on sales and excise taxes paid by farmers other than on motor fuels are not available. But generally speaking, these also have been increasing in recent years.

During recent years, farmers' income taxes have become particularly important. These, of course, are not a part of operating costs, but they do reduce disposable income of many farmers, and they may impair the farmer's liquid asset position. It is estimated that in 1950 farmers will pay 675 million dollars in Federal income taxes on income earned in 1949. This is somewhat less than the amount paid in 1949 and substantially less than those paid in the peak year 1948.

Higher Federal income tax rates became effective October 1, 1950. Economic conditions in agriculture improved noticeably during the latter half of the year; nevertheless tentative estimates indicate that Federal income tax payments of farmers will continue downward in 1951. Estimates of State income taxes paid by farmers are not available.

Insurance - Farmers' insurance premiums for fire and windstorm insurance probably will be higher in 1950 and 1951 than in 1949, not because of any appreciable increases in rates but because farmers have tended to increase their insurance to more adequately cover property values. Insurance held by farm mutual companies, for example, has increased for many years. However, the recent increases have been at a decreasing rate - somewhat paralleling the leveling off in property values. The increase in insurance of mutual companies amounted to about 9 percent in 1949, compared with 12 percent in 1948.

Losses of farmers paid from insurance carried with the farm mutuals decreased in 1949 for the first time since 1942, and amounted to about 14 cents per $100 of insurance, compared with 17.4 cents in 1948. By areas, losses paid in 1949 were higher, in proportion to insurance carried, in the Southwest and Northeast than in the Southeast and Northwest.

Windstorm losses of farm mutuals were particuarly heavy in 1950 in certain Midwestern States including Iowa, Missouri, Wisconsin, Illinois and Michigan, and parts of Colorado and Nebraska. For example, a farm company that carries a large proportion of the windstorm business in Iowa paid out more for windstorm claims in 1950 than in any other year during the preceding 60 years.

Premiums paid by farmers in 1950 for hail insurance on growing crops amounted to about 10 percent less than they did in 1949, due chiefly to smaller amounts of the insurance being carried by farmers. More farmers buy crop-hail insurance and they buy more of it in years when crop prospects are good than in years when crop prospects are poor. Drought and insects caused crops to be particularly poor this year in Texas, Oklahoma and Southwest Kansas, where considerable amounts of crop-hail insurance are usually taken. Losses on crop-hail policies were particularly heavy this year in Arizona, on cotton in Texas, and on tobacco in North Carolina.

Federal crop insurance was offered in 1950 on wheat in 283 counties; on cotton in 80 counties; flax, 63 counties; corn, 73; tobacco, 52; dry edible beans, 18; and on multiple crops, in 55 counties. Participation in the insurance program increased from an average of 419 insured farmers per eligible county in 1949 to 496 in 1950. The Federal Crop Insurance Corporation collected more in premiums than it paid out as indemnities to farmers during the 3-year period 1947-49.

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# THE Farm Cost SITUATION

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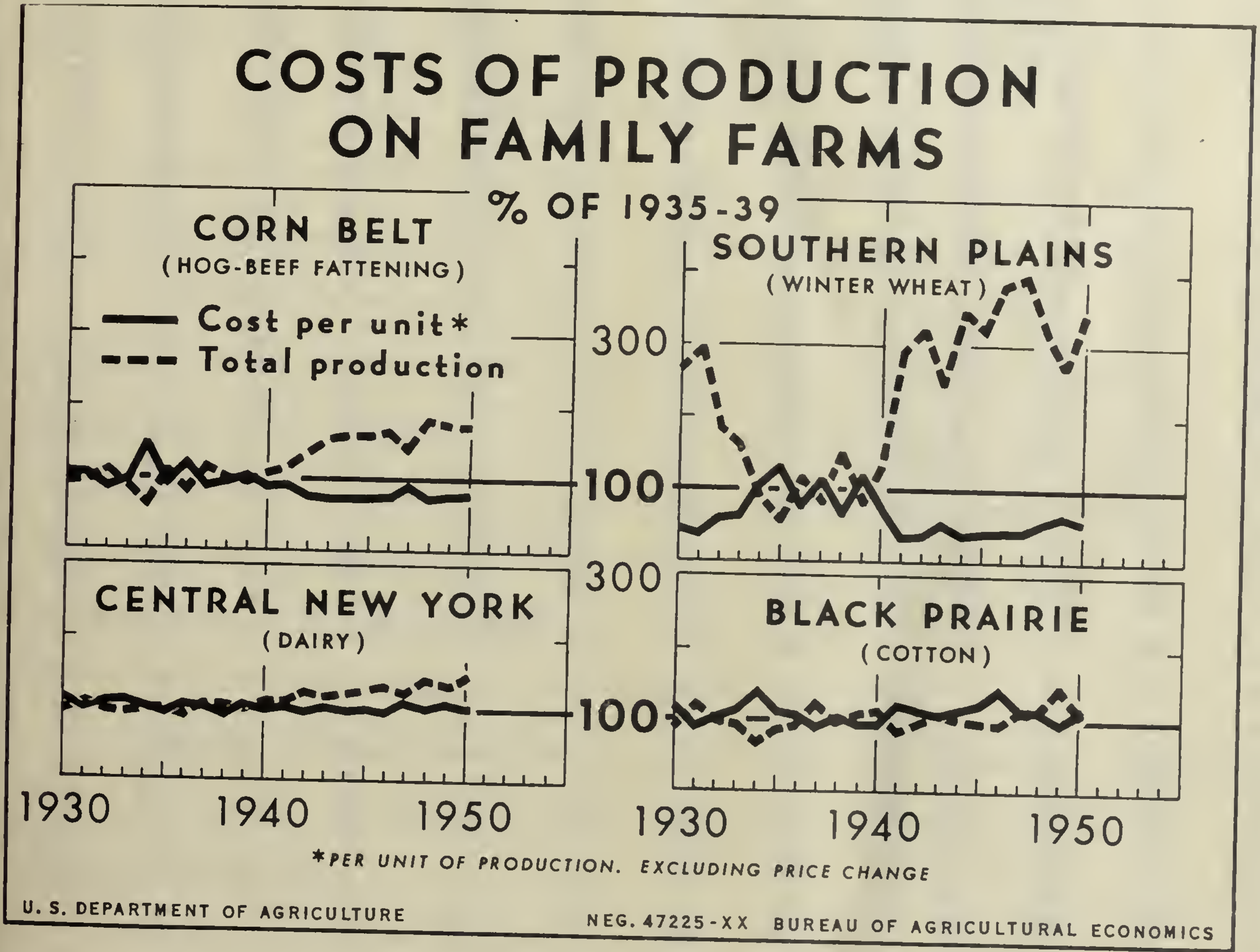

COSTS OF PRODUCTION ON FAMILY FARMS

*PER UNIT OF PRODUCTION. EXCLUDING PRICE CHANGE

U. S. DEPARTMENT OF AGRICULTURE NEG. 47225-XX BUREAU OF AGRICULTURAL ECONOMICS

Costs of farm production, in terms of physical inputs, have shown the largest decline for those types of farms where total production has increased the most. In general, crop farms have shown relatively larger gains in production efficiency than have livestock farms. Hybrids and other higher yielding varieties of seeds, favorable weather, and labor-saving machinery and equipment in recent years have been particularly favorable to crop producers.

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Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39=100)

| Year | All commodities 1/ | All commodities 2/ | Feed | Live-stock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 3/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 75 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 77 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 81 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 83 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 121 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 140 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 153 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 162 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 118 | 103 | 100 | 71 | --- | --- | 106 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 118 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 127 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 129 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 131 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 129 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 129 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 133 | 119 | 132 | 146 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 131 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 124 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 106 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 92 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 87 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 94 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 82 |
| 1935 | 98 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 99 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 106 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 99 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 106 |
| 1940 | 99 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 121 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 137 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 154 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 167 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 190 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 210 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 202 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 208 | 199 | 200 | 324 | 144 | 200 | 180 | 177 | 218 | 141 | 194 | 352 |
| Jan. | 202 | 191 | 191 | 283 | --- | 199 | --- | --- | --- | --- | --- | 349 |
| Feb. | 202 | 191 | 190 | 294 | --- | --- | --- | --- | --- | --- | 197 | --- |
| Mar. | 203 | 193 | 191 | 306 | 140 | 198 | 178 | 175 | 206 | --- | 194 | --- |
| Apr. | 204 | 194 | 194 | 310 | --- | --- | --- | --- | --- | 141 | 194 | 353 |
| May | 208 | 198 | 204 | 326 | --- | --- | --- | --- | --- | --- | 194 | --- |
| June | 209 | 199 | 202 | 331 | 141 | --- | 179 | 176 | 211 | --- | --- | --- |
| July | 210 | 201 | 206 | 331 | --- | 198 | --- | --- | --- | --- | --- | 355 |
| Aug. | 210 | 201 | 207 | 327 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 211 | 202 | 203 | 340 | 146 | 201 | 182 | 178 | 226 | 141 | 189 | --- |
| Oct. | 211 | 202 | 201 | 341 | --- | --- | --- | --- | --- | --- | --- | 353 |
| Nov. | 213 | 205 | 204 | 349 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 215 | 207 | 210 | 355 | 149 | 204 | 183 | 179 | 229 | --- | --- | --- |
| 1951 |  |  |  |  |  |  |  |  |  |  |  |  |
| Jan. | 222 | 213 | 219 | 381 | --- | 203 | --- | --- | --- | --- | --- | 372 |
| Feb. | 226 | 218 | 222 | 407 | --- | --- | --- | --- | --- | --- | 193 |  |
| Mar. | 229 | 221 | 224 | 415 | --- | --- | --- | --- | --- | --- | 195 | 372 |

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1/ Including interest, taxes, and wage rates. Excludes family living.
2/ Excluding interest, taxes, wage rates, and family living.
3/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices", Bureau of Agricultural Economics, January 31, 1950.

# THE FARM COST SITUATION

Approved by Outlook and Situation Board, April 4, 1951

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## GENERAL SITUATION

Farmers' production expenses in 1951 are expected to be 10 to 15 percent higher than in 1950 when they reached the highest level on record.

During the first three months of 1951, prices paid by farmers for production items, interest, taxes, and wage rates averaged 12 percent higher than in the same months of 1950 and 13 percent higher than in 1949, and for the year, will average higher than in any previous year. However, total production expenses will be up even more than prices of production items because an increased quantity of goods and services will be needed for the record farm production in prospect for this year.

Supplies of some production items are expected to be short. However, record farm production probably can be attained if available supplies are properly distributed.

Not only will most production goods and services cost more in 1951, but other expense items will be up. With farmers using more credit, total interest payments will increase. Taxes also will be higher. Those buying land will find that prices are substantially higher than a year ago and at an all-time peak in many parts of the country.

Farm wage rates in 1951 probably will average at least 10 percent higher than in 1950. Some areas will have difficulties in getting an adequate supply of farm labor, although the supply is expected to be generally adequate. The armed forces and industry will continue to take manpower from farms, but if recruitment campaigns are effective more extensive use of persons not now in the farm labor force as well as farm workers from outside continental United States will help to fill the gap.

Farmers had a record amount of machinery at the beginning of 1951, and there probably is enough machinery now on farms, if it can be kept in repair, to maintain farm production at a high level in 1951. But production of some of the newer types of farm machines may not be sufficient to meet the demand this year. Prices of farm machinery are about 10 percent higher than a year ago.

Prices of fertilizer are a little higher this spring than last fall but still somewhat lower than in 1949. However, the main problem is that of obtaining as much fertilizer as could be used to advantage. Prospective supplies of phosphates for the 1950-51 season are below those of last year. Supplies of nitrogen and potash, though substantially larger than last year, probably will be below what farmers would buy if larger supplies were available

Prices of most materials used for the construction and maintenance of farm buildings and fences will be at record highs in 1951. Prices of these materials in December, 1950 averaged about 17 percent higher than a year earlier. Supplies and production of lumber in early 1951 have been substantially above a year ago, but if credit and material restrictions result in some reduction in the current high rate of construction, both demand and prices may fall off from present levels. Metal products used in farm construction and maintenance may be in shorter supply than last year but supplies are expected to be more adequate than during the last national emergency.

Production of baler and binder twine probably will be adequate to meet 1951 requirements. Production of bale ties has increased in recent months and the supply should be adequate to avoid a recurrence of last year's severe shortage, although some local shortages may occur because of distribution problems. Supplies of most types of wooden containers are expected to be adequate but bags and paper packaging materials may be in short supply.

Production of insecticides and fungicides in 1951 is likely to fall somewhat short of demand. Carry-over stocks last September were the lowest since 1946, and production in 1951 will be limited by the short supplies of such raw materials as chlorine, benzene and sulfur. Wholesale prices of most of the important pesticides have risen substantially since last July and DDT and pyrethrum are difficult to obtain even at the prices currently quoted. Supplies of some of the newer types of insecticides for the control of boll weevil are expected to be tight, but calcium arsenate will be available as an alternate.

Prices of feed are about 10 percent higher than 6 months ago and more than 20 percent higher than a year ago. Relatively favorable rates of return from feeding, combined with increased numbers of livestock on farms, will result in the use of nearly a fourth more feed during the current feeding year than was produced in 1950. Feed grain stocks next October are expected to be nearly a fourth lower than those of a year earlier. Consequently, there is need for a larger feed grain crop in 1951 than in 1950 if current rates of disappearance continue. Many farmers could hold down their feed costs by using more roughages and pasture and still obtain good returns from their livestock.

## Farm Labor

The supply of farm labor in 1951 will be smaller than in 1950. Difficulties in getting an adequate supply of farm workers will be encountered in many local areas. But labor supply will be adequate to keep farm production at high levels if effective recruitment campaigns are conducted.

Farm wage rates at the beginning of this year were 7 percent higher than in January 1950. Rates during both 1949 and 1950 averaged 3 percent lower than the record rates of 1948 (table 1). Further drain of manpower from farms to industry and the armed forces are in prospect this year. As a result, farm wage rates in 1951 likely will increase above those of 1950 by 10 percent or more, and reach a new record level. The extent of the rise in rates may be affected by developments in the wage stabilization program for both agriculture and industry.

The full effect of this year's defense program on the supply of farm labor probably will not be felt for several months. As more of the defense contracts progress from the planning stage to the actual production phase, industrial demands for workers will increase, even though considerable conversion of civilian production to defense production occurs. Despite a further rise in farm wage rates, industrial job opportunities will attract many farm workers. Additional losses of farm workers also will occur from expansion of the armed forces.

The supply of domestic migratory farm workers probably will be less this year than in 1950. Partly offsetting this probable loss is the prospective increase in the number of workers recruited from foreign countries, and in the number of Porto Ricans coming to Continental United States for farm work. Some farmers will have to rely considerably on seasonal workers such as women and youth who normally may not have engaged in farm work. More effective use of workers now living on low producing farms also offers opportunities for increasing the effectiveness of the Nation's labor supply.

The supply of seasonal farm workers relative to the demand probably will be shortest in the fall. If the manpower requirements of the defense program continues to increase, as now seems likely the effects of this on the supply of seasonal farm workers will be most pronounced by fall. This also is the time when the seasonal peak demand for farm labor occurs. Labor supply difficulties are in prospect in a number of local areas this fall, including some areas in the South where a large cotton crop is anticipated.

A smaller supply of year-around workers is also expected. Dairy farmers in areas adjacent to industrial centers are likely to experience the greatest difficulty in securing regular workers.

Productivity of farm workers is greater now than ever before. This has been brought about chiefly by increased mechanization, widespread adoption of improved farming practices and generally favorable weather. Technological advances in farming also have meant that, over the years,

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-50 inclusive

(Index numbers 1935-39 = 100)

| Period or year | Farm employment: Total 1/ | Farm employment: Family 1/ | Farm employment: Hired | Gross farm production 2/: Total | Gross farm production 2/: Per worker 3/ | Farm wage rates 4/ | Ratio of farm wage rates to: Production per worker | Ratio of farm wage rates to: Gross farm income per worker 5/ |
|---|---|---|---|---|---|---|---|---|
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 103 | 108 | 108 | 107 | 99 | 101 |
| 1941 | 98 | 97 | 101 | 111 | 113 | 125 | 111 | 92 |
| 1942 | 98 | 97 | 101 | 123 | 126 | 163 | 129 | 90 |
| 1943 | 97 | 97 | 96 | 120 | 124 | 217 | 175 | 95 |
| 1944 | 95 | 97 | 88 | 124 | 131 | 263 | 201 | 108 |
| 1945 | 93 | 96 | 83 | 123 | 132 | 297 | 225 | 113 |
| 1946 | 95 | 98 | 85 | 126 | 133 | 320 | 241 | 108 |
| 1947 | 96 | 98 | 88 | 121 | 126 | 346 | 275 | 100 |
| 1948 | 95 | 96 | 91 | 131 | 138 | 365 | 264 | 103 |
| 1949 | 92 | 93 | 89 | 129 | 140 | 354 | 253 | 106 |
| 1950 6/ | 89 | 90 | 85 | 126 | 142 | 352 | 249 | 103 |

1/ Includes farm operators and members of their families working without wages.
2/ Includes value of farm-produced power of horses and mules.
3/ Based on total farm employment and total gross production.
4/ Simple average of quarterly indexes seasonally adjusted.
5/ Because of the increase in volume of production and the increase in the price of farm products, the gross farm income per worker has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1950.
6/ Preliminary.

progressively more farm products have been produced by fewer farm workers. The downward trend in farm employment has continued in recent years. But the present advanced state of farm technology and the need for high-level food production means that it is necessary to retain a basic core of experienced regular workers on farms. Present Selective Service policies recognize this need. But farmers also are likely to seek to improve their competitive position for labor by increasing farm wage rates and by improving working and living conditions for farm workers. This would aid in keeping a sufficient number of competent workers on farms. A further rise in productivity of farm labor should enable commercial farm operators generally to carry through their production plans without unduly increasing labor costs per unit of farm output.

## Farm Power and Machinery

Prices of farm machinery increased during the last half of 1950, and wholesale prices now are about 10 percent higher than in 1949 and the first half of 1950. Since 1941 the relation of prices of new machinery to prices of most farm products and to farm incomes and farm wages has favored purchase of a large volume of farm machinery. Increased acreages of the major crops, especially cotton, corn and wheat will contribute to increased demand for machinery in 1951. High farm incomes and reduced labor supplies in 1951 are also expected to influence farmers to buy more machines and equipment than otherwise.

Production of farm machinery in 1951 probably will be somewhat less than the high annual production of the past three years. The issuance by NPA of Order M-55 authorizing farm machinery manufacturers to use DO priorities for the month of June should greatly help manufacturers to obtain the materials they need to meet farmers' machinery requirements. It is expected that assistance will be continued beyond the month of June. Production of farm machinery in 1951 is expected to be sufficiently high to maintain farm production at high levels. But production of some of the newer types of machines may not be sufficient to meet demands. The total volume of power and machinery on farms now exceeds that of any previous year.

Complete details of farm machinery production in 1950 are not yet available. Owing largely to labor-management disputes in the last half of 1950 in several of the major producing companies, total output for the year probably was moderately below the high output of the two previous years. Total volume of exports of farm machinery in 1950 was about 20 percent below the large 1949 exports. Exports in 1950 to the ERP countries, including dependent territories, were about 30 percent below 1949 exports. In many foreign countries the backlog of machinery orders has about been filled. Production of machinery in foreign countries has increased and has contributed to reduced exports of machinery from the United States.

Total volume of power and machinery (including workstock) on U.S. farms on January 1, 1951 was a record high and probably about 75 percent higher than the average of the prewar years 1935-39 (table 2). This increase in total power and machinery on farms has taken place, notwithstanding a decrease since the prewar period of about 50 percent in the numbers of workstock.

Numbers of work animals on farms have declined about 10 percent per year since 1945. Because of the decreased demand for workstock, prices have been low and the size of the colt crop has continued to decrease. The 1950 colt crop of 136,000 was the smallest in over a century. Colt crops of this size would maintain a total horse and mule population of around 2,500,000 head. There were around 6,750,000 head of farm horses and mules of all ages on January 1, 1951. Of this number about 6,260,000 were workstock (3 years old and over). This was only 30 percent of the peak number of 1923 and only slightly more than half of the number on January 1, 1940.

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-50

(Index numbers 1935-39 = 100)

| Year or period | Number on farms, January 1 1/ | | | | | | Volume on farms January 1 2/ | | Gross farm income calendar year 3/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules, all ages | Work stock 3-years old and over | Colts under 1-year of age | Tractors | Auto-mobiles | Motor-trucks | All machinery and equipment other than tractors and other motor vehicles | All farm power (including work animals) machines and equipment | | |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 119 | 106 | 106 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 126 | 110 | 133 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 140 | 116 | 178 | 148 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 157 | 121 | 221 | 179 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 161 | 121 | 232 | 183 |
| 1945 | 76 | 77 | 54 | 195 | 107 | 153 | 176 | 126 | 244 | 193 |
| 1946 | 70 | 72 | 41 | 208 | 107 | 159 | 193 | 130 | 280 | 219 |
| 1947 | 64 | 66 | 35 | 225 | 116 | 178 | 214 | 137 | 332 | 257 |
| 1948 | 58 | 61 | 31 | 253 | 127 | 197 | 247 | 150 | 336 | 266 |
| 1949 | 52 | 55 | 27 | 281 | 136 | 216 | 281 | 163 | 308 | 233 |
| 1950 | 47 | 50 | 22 | 307 | 149 | 226 | 303 | 173 | 307 | 239 |
| 1951 4/ | 43 | 46 | 18 | | | | | | | |

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1/ The 1935-39 average was for horses and mules all ages, 15,750,000 head; for workstock 13,700,000 head; for colts 744,000 head; for tractors 1,244,000; for automobiles 3,896,000; and there were 973,000 motortrucks.

2/ In terms of 1935-39 prices.

3/ Includes Government payments.

4/ Preliminary.

The number of all tractors on farms January 1, 1951 probably was over 4 million. Farmer discards of various types of machines in 1950 are believed to have averaged more than in recent years. Dealers' stocks of farm machinery on January 1, 1951 are believed to have been less than the high stocks of a year earlier but higher than for any other recent year.

## Feed

Although stocks of feed grains were a record high on January 1, 1951, requirements for feed for livestock and other purposes are so high that stocks of feed grains this fall will be down one-fourth from those of the previous year. Thus, more feed grains will be used up during the current feeding year than were produced in 1950. With demand for meat and other livestock products high and livestock numbers increasing, there is need for a much larger feed grain crop in 1951 than in 1950.

Prices of feeds are about 10 percent higher than 6 months ago and more than 20 percent higher than a year ago (table 3). Prices of corn, oats, and barley on March 15 were near parity, the legal minimum level at which ceilings can be established on the commodities. Prices of wool and lamb, beef cattle and veal calves were far above parity, hogs were at parity and milk was slightly below parity. Eggs and chickens were about 10 percent below parity.

On March 15 returns per $1.00 of feed fed to sheep and beef cattle were far above the 1935-39 average, returns for hogs and milk were above average and returns for butterfat, eggs and chickens were about 10 percent below average. Returns per dollar of feed cost were considerably higher than a year ago for sheep, cattle and milk; the largest increase being for sheep (table 4). Prices of wool and lamb are much higher than a year ago.

The prospective tight feed-grain situation suggests that livestock and poultry producers should avoid feeding practices that use feed extravagantly. Most practices that save feed also reduce production costs. The high returns per $1.00 of feed for beef cattle encourages the feeding of grain to cattle. Probably more grain is fed than necessary to stock cattle and breeding herds. If plenty of good roughage is available, little if any grain is needed in wintering these cattle. It is generally poor economy to feed grain in the winter to stock cattle if they are to be run on pasture the following summer.

Feed used to get excessive finish on cattle would produce much more meat if used to feed more cattle. But, it may be profitable to the individual farmer as long as prices of top grade of cattle are much higher than for those with less finish. However, price spreads between the top and lower grades are currently narrowing. More hay, pasture, and silage and less corn will give a moderate finish at a lower cost. Grain requirements of cattle while on pasture are less than in drylot and enables beef to be produced at lower costs.

Table 4.- Returns per $1.00 of feed cost, United States, March 15, 1951 with comparisons 1/

| Item | 1935-39 average | March 15, 1950 | September 15, 1950 | March 15, 1951 |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars |
| ggs | 1.72 | 1.33 | 1.56 | 1.56 |
| hickens | 1.84 | 1.56 | 1.47 | 1.61 |
| ilk | 1.92 | 1.84 | 1.89 | 1.94 |
| utterfat | 1.55 | 1.43 | 1.37 | 1.40 |
| ogs | 1.50 | 1.65 | 1.80 | 1.64 |
| eef | 1.39 | 2.11 | 2.35 | 2.53 |
| heep | 1.44 | 1.67 | 1.92 | 2.64 |
| | (Index numbers 1935-39 = 100) | | | |
| | Percent | Percent | Percent | Percent |
| ggs | 100 | 77 | 91 | 91 |
| hickens | 100 | 95 | 80 | 88 |
| ilk | 100 | 95 | 98 | 101 |
| tterfat | 100 | 92 | 88 | 90 |
| gs | 100 | 110 | 120 | 109 |
| ef | 100 | 152 | 169 | 182 |
| eep | 100 | 116 | 133 | 183 |

/ The following quantities of feed were used in calculating feed cost:
pounds of poultry ration per dozen eggs; 4½ pounds of poultry ration per
ound of chicken; 7½ bushels of corn plus 20 pounds of soybean meal per 100
ounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling
eas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds
concentrate ration fed to milk cows in cream selling areas plus the value
27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels
corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of
rn plus 1,500 pounds of hay per 100 pounds of sheep and lamb. It was assumed
at for each 100 pounds of sheep and lamb produced 20 pounds of wool was
oduced from the same feed. The quantity of hay for milk cows, beef cattle
d sheep includes an allowance for silage and pasture. It was assumed that
e feed nutrients from pasture would cost 1/4 as much per pound as they would
obtained from hay.

Table 3.- Average prices of feeds in the United States, March 15, 1951 with comparisons

| Item | Unit | March 15, 1950 | September 15, 1950 | March 15, 1951 |
|---|---|---|---|---|
| Prices received by farmers | | | | |
| Corn | Bushels | $ 1.19 | $ 1.44 | $ 1.60 |
| Oats | do. | .72 | .73 | .92 |
| Barley | do. | 1.10 | 1.14 | 1.34 |
| Sorghum grain | Cwt. | 1.93 | 1.77 | 2.12 |
| Hay, baled | Ton | 21.20 | 20.30 | 23.10 |
| Feed grains and hay, Index number (1935-39=100) | | 183 | 204 | 233 |
| Prices paid by farmers | | | | |
| Mixed dairy feed 16% | Cwt. | 3.41 | 3.64 | 4.07 |
| Laying mash | do. | 4.34 | 4.60 | 4.92 |
| Cottonseed meal | do. | 3.74 | 4.35 | 4.89 |
| Soybean meal | do. | 4.11 | 4.44 | 4.75 |
| Linseed meal | do. | 4.26 | 4.34 | 4.55 |
| Meat scrap | do. | 6.15 | 6.75 | 6.56 |
| Bran | do. | 2.86 | 3.08 | 3.31 |
| Middlings | do. | 3.00 | 3.28 | 3.47 |
| Alfalfa hay, baled | Ton | 31.80 | 29.60 | 34.10 |
| Prices paid by farmers for feed, Index number (1935-39=100) | | 191 | 203 | 224 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | |
| Fed to poultry | Cwt. | 3.40 | 3.68 | 4.00 |
| Fed to milk cows in milk selling areas | Cwt. | 3.01 | 3.21 | 3.54 |
| Fed to milk cows in cream selling areas | Cwt. | 2.62 | 2.84 | 3.21 |

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1/ Value of the corn, oats, oil meal, milk feed, commercial mixed feed, etc., making up 100 pounds of "grain" ration.

Some practices will save feed and keep down costs in hog raising such as:

(1) Holding market weights near last year's levels - about 220 pounds in the eastern Corn Belt and 240 pounds in the western Corn Belt.

(2) Feeding a ration balanced with protein and other supplements. It is false economy to feed little or no protein supplement to hogs, although a saving in cash expense is made by such a practice, the actual cost per pound is increased since 1 pound of protein feed will replace 2 or more pounds of corn. Also hogs will reach market weights sooner when a balanced ration is fed.

(3) Running hogs on good pasture during the summer--good pasture will save 10 percent of the grain and considerable protein supplement in fattening hogs.

(4) Lowering death loss of pigs--a pig at birth already has cost 150 pounds of feed whether it lives or dies.

Feed can be saved and costs lowered by carefully culling milk cows. At the present time an average of 4 heifers are raised for every 17 milk cows. Three heifers would be sufficient if the good cows were kept longer.

An ample ration of good quality roughage will produce about 15 pounds of milk per cow per day without grain. The grain fed should be for the milk above this level. Feeding grain to milking cows according to their individual production will save feed. Many low producing cows are fed too much grain. On the other hand, good hay and pasture alone do not furnish sufficient feed for high producing milk cows.

Poultry producers do not have the flexibility other livestock producers have in varying the rate of feeding or in selecting kinds of feed because a reduction in feed per bird or in quality of feed probably will reduce output more than it reduces cost. Many poultrymen, however, can save feed by using feeding equipment that reduces waste, and by culling out low producing hens.

Pastures and ranges supply one-third of all the feed consumed by livestock in this country. Many of these pastures can produce much more feed with proper use of fertilizers, seed and renovation. Some irrigated pastures have produced nearly 1,000 pounds of gain on beef cattle per acre in a season. Even 200 pounds of gain per acre at present prices of cattle will pay for a lot of fertilizer and seed. Fertilizer properly applied to pastures will lower the cost per unit of feed from pastures.

## Seeds

Retail prices of 15 out of 27 seeds of legumes, grasses, and grains were higher on March 15 of this year than last. Of the legumes, prices of common and Grimm alfalfa, alsike clover, white clover, and Korean and Kobe lespedeza were higher this year, whereas prices of red clover, sweetclover, Ladino clover, and sericea lespedeza were lower. Most of the grass seed prices were lower this year than last, with sharpest declines for smooth brome, timothy, crested wheatgrass, redtop, and common ryegrass. Prices were higher for Kentucky bluegrass, Sudangrass, Siberian millet, and orange sorgo ("cane"). Prices of seed grains--corn, wheat, oats, and barley--were higher in mid-March than a year ago.

Compared with the 1945-49 average, March 15 prices of 19 seeds were higher this year, and 8 were lower. Largest increases from the 5-year average prices were recorded for redtop, timothy, Sudangrass, common alfalfa, orchard grass, and Kentucky bluegrass in the order listed. On the other hand, declines from the average were sharpest for sericea lespedeza, Ladino clover, red clover and orange sorgo.

Current supplies (production plus carry-over and imports) of 30 legume and grass seeds total nearly 1.5 billion pounds; the largest on record, and more than 50 percent greater than a year ago. Compared with the 1945-49 average, these supplies are largest for lupine, Ladino clover, tall fescue, Austrian Winter peas, hairy vetch, red fescue, crimson clover, sweetclover, and smooth brome. The only kinds of seeds the supplies of which are much (one-fifth or more) below the 5-year average are Hungarian vetch, redtop, Sudangrass, and alfalfa seed from the central group of producing States. Supplies of all field seeds except northern and central alfalfa seed appear to be fully adequate to meet prospective demands this spring.

Because of the current emergency, relatively less attention is likely to be paid to the production of legume and grass seeds this year and more to food and feed crops. To counteract, in part, this trend, support prices designed to encourage seed production have been announced by the U. S. Department of Agriculture for 7 winter cover crop and 31 hay, pasture, and range grass seeds. Furthermore, the Department has recommended, in connection with its production guides, increased production this year over last for northern and central origins of alfalfa, Ladino clover, Kobe lespedeza, smooth brome, crested wheatgrass, and crimson clover, and decreases of only 1 to 5 percent below the high level of production last year of southern white clover, tall fescue, orchard grass, hairy vetch, and common and Willamette vetch. However, rather large (18 to 43 percent) reductions from the record 1950 production are recommended for red clover, lupine, and common ryegrass.

## Fertilizer

Current relationships between prices of fertilizer and farm products are sufficiently favorable to warrent increased fertilizer applications as a means of increasing crop production. Steadily increasing demand, and the probability of shorter supplies of some materials particularly phosphoric acid may contribute to further rise in fertilizer prices.

The big problem is that of providing sufficient supplies of fertilizer to meet the needs of farmers. At present, supplies of phosphate fertilizers are the most critical. For the year ending June 30, 1951 they will be less than in the previous year. Nitrogen and potash supplies available for farmers will be significantly larger than last season but, at least in the case of nitrogen, supplies probably will be somewhat shorter of quantities farmers would buy. If adequate supplies were available fertilizer consumption next year probably would increase even more rapidly than it has during the past several years.

The use of fertilizer is important in attaining higher levels of food and fiber production. Improvements in other practices will continue to contribute to increased production, but the potentialities for quick increases in production are better through use of fertilizer than by most other means. Expansion in production of feed and forage crops to sustain higher levels of livestock production will depend much on substantial increases in the use of fertilizers.

A survey of fertilizer use in 1947 indicates that a little more than one-fourth of all fertilizer used in the United States that year was applied to the corn crop. This is nearly 2-3/4 times as much as was used on the cotton crop. About 15 percent of all fertilizers was used on small grains. Less than 7 percent of the total fertilizer used that year was used on pasture but some of the fertilizer used on previous crops benefits succeeding hay and rotation pasture. About 28 percent of the combined acreage of small grains and hay, and 9 percent of the pasture land in the humid regions received applications. In contrast, about 62 percent of the combined acreage of some important intertilled crops (corn, cotton, tobacco, sugar crops, potatoes, sweetpotatoes, and vegetables) received fertilizer applications in 1947.

Rates of application per acre on small grains, hay and pasture are about 50 percent lower than on the combined treated acreage of intertilled crops mentioned above. The rate of application on corn was about 35 percent below the average rate for the group of intertilled crops. Rates of application on all feed (including corn) and forage crops are generally well below what experimental evidence indicates would be most profitable at existing price relationships. Most farmers have a long way to go in the application of fertilizer before a point is reached where application of fertilizer makes its optimum contribution to the farm business. In balancing costs to attain highest net farm returns, proper use of fertilizer where adapted, is important.

## Building Materials, Supplies and Containers

Prices paid by farmers for materials used in the construction and maintenance of farm buildings and fences are at record high levels. They are about 17 percent higher than a year ago and about 138 percent higher than the 1935-39 average. From December 1949 to December 1950 retail prices of selected items increased as follows: framing lumber, 24 percent; rough boards, 17 percent; dressed boards, 21 percent; wood shingles, 36 percent; nails, 5 percent; galvanized roofing, 14 percent; cement, 7, percent; concrete blocks, 5 percent; house paint, 4 percent; and barbed wire, 7 percent. Since December the trend of most of these prices has been upward but at a slower rate.

These increases in prices of building materials have raised the cost of farm building construction to the highest levels on record. For example, at U. S. average prices, the materials (excluding sand and gravel) used in the construction of a typical poultry house large enough for 200 layers (16' x 48') would have cost slightly less than $300 in 1940. By 1948 successive price increases had raised the cost of the same bill of materials to $730. Prices of many building materials dropped somewhat in 1949 and by December 15 of that year the cost of the same materials was down to $675. However, by December 15, 1950 the cost of these materials had risen to $770 and has risen since then.

To a large extent, recent increases in prices of building materials were brought about by the wave of buying that followed the beginning of the war in Korea. Total construction activity (farm and non-farm) in January 1951 was 20 percent higher than in January 1950. Inventories of building materials in retail lumber yards January 1, 1951 were substantially larger than a year earlier when they were considered in good supply. Sawmills in the Pacific Northwest were working multiple shifts in January and February of this year, and lumber was being produced at a rate 25 percent higher than for the 1950 average. Shipments of lumber were running ahead of production yet orders were accumulating faster than they were being filled. In situations like this, prices are often above the level necessary to maintain normal output. If the demand for lumber declines later in the year, as is expected, the price of lumber also may go down.

Construction materials made of metal such as structural steel, metalroofing, and siding, pipe and tubing, fencing, nails and staples may be in short supply but quantities available for farm construction in 1951 are expected to be more adequate than during the last national emergency. Prices, however, will be substantially higher.

Increased production of bale ties in recent months should prevent a repetition of last year's severe shortage. However, because of the proposed increase in production of automatic wire balers and the fact that there is not a standard size wire for all makes of balers, uneven distribution may develop and spot shortages may occur in some areas.

Production of baler and binder twines probably will be adequate to meet 1951 requirements. There is considerable advance seasonal buying and some evidence that some farmers are buying more than they expect to use this year. If many do this there will not be enough twine to go around. The BLS wholesale price index of binder twine on January 1, 1951 was 12 percent above the price on January 1, 1950. The wholesale price of manila rope was 17 percent higher.

Containers will cost more in 1951 mainly because of increases in prices of raw materials. The wholesale price of burlap was 70 percent higher in January 1951 than a year earlier. There also have been substantial increases in prices of cotton cloth, paper, lumber, nails and other materials used in the manufacture of containers.

Supplies of wooden containers, except wire bound, used by farmers in marketing farm products are expected to be adequate to meet 1951 requirements. Burlap, cotton and paper bags probably will be in short supply. Farmers, dealers and others should conserve and repair bags and containers. The high cost of containers will encourage conservation practices. The farmer who pays 30 to 50 cents for a bag probably will take good care of it and return it promptly.

## Insecticides and Fungicides

Insecticides and fungicides will be in stronger demand in 1951 than in 1950, and the prices will be higher. The carryover at the end of September 1950 was the lowest since 1946. Heavy infestation of insects on cotton in 1950 virtually used up all insecticides in the Southeastern States. The expected increase in cotton acreage in 1951 probably will require more insecticides than were used last year. The expected heavy attack by corn borers in the Midwest did not develop last year, consequently some DDT was carried over in that area which could not be transshipped to the cotton belt.

In proportion to demand, production of pesticides is not expected to be as large in 1951 as it was in 1950 primarily because of shortages of some raw materials. Those in shortest supply are chlorine, benzene, and sulfur. Benzene and chlorine are used in the production of DDT, benzene hexachloride, lindane, methoxychlor, (2-4-D) weed killer, and a number of other newer insecticides. Dusting sulfur is essential for the control of some pests. Because it has been cheap, it has been used more freely than necessary. Due to the shortage of sulfur this year, dusts will be formulated with talc in place of sulfur wherever possible to conserve supplies of the latter. Containers for shipping pesticides are in short supply, and may hinder proper distribution of available materials.

Prices of several of the important pesticides have risen considerably during the past 8 months. Wholesale prices quoted in July 1950 compared with those for February 1951 showed the following changes in price for some of the important pesticides. Benzene hexachloride, 65 percent higher; DDT, 50 percent higher; copper sulfate, 10 percent higher; and sulfur, 25 percent higher. Prices quoted for some other pesticides such as aldrin, lindane, calcium arsenate, pyrethrum, and rotenone were the same in February 1951 as in July 1950. One factor that should not be overlooked, however, is that last July these materials were available, whereas, in February it was difficult to obtain either DDT or pyrethrum at prices quoted.

In recent years benzene hexachloride, dieldrin, toxaphene, and aldrin have become important insecticides for the control of boll weevil on cotton. Supplies of these insecticides are likely to be tight in 1951. Calcium arsenate, however, will be available as an alternate.

Farmers can aid in the equitable distribution of insecticides and fungicides by purchasing their minimum needs early in the season and storing them in a dry place. This will enable manufacturers who have adequate plant capacity, but who lack storage space, to produce the materials well in advance of the time they are needed. Most insecticides if properly stored can be carried from one season to the next without loss of their effectiveness. Growers should plan their insect control programs so as to utilize any of the various effective insecticides which are available.

Certain cultural practices reduce losses from insects and often reduce and may eliminate the need for insecticides. Reasonably early planting of adapted varieties often enables plants to produce maximum growth before insects attack. A fertile soil likewise will help plants to make rapid growth and will enable them to withstand injury after insects attack them. The destruction of host crops where pests breed or hibernate will reduce the number of insects in the following season.

## Farm Land Values and Rentals

Farm land is currently selling at record high prices in many parts of the country. Advances since last July have raised average values in many States well above the previous peaks reached in early 1949. Increases were moderate during the first half of 1950, averaging about 2 percent for the country as a whole, but since then the improved outlook for farm earnings has resulted in sharp gains throughout the country. By November 1950, the national index was up 4 percent from March and the upturn has continued at an accelerated rate. Preliminary estimates this March indicate values have increased an additional 6 to 8 percent since last fall, and the total increase for the country as a whole, from March a year ago is expected to be at least 12 percent.

Regionally, the largest gains since last July have been in the North Central States and in the Southwest. Tentative estimates as of March 1, indicate increases of 15 to 20 percent from a year earlier for Ohio, Indiana, Illinois, Iowa, Minnesota and Nebraska. Other States outside the Midwest that are expected to show increases within this range include Texas, Arkansas, Arizona, Wyoming and Florida. Prices of irrigated and grazing land in the Mountain and Pacific Coast States appear to have increased somewhat more than dry farming land, but are still slightly below their previous peaks in November 1948.

The sharp rise in land values since Korea is based on higher level of farm income anticipated in 1951 and later years rather than on the income realized in 1950. Net income of farm operators in 1950 was 8 percent below 1949, and nearly 27 percent below the 1947 peak. With prices received by farmers in January and February 1951 about a third higher than a year earlier, however, and with record or near-record farm production in prospect (assuming normal weather), a substantial increase in net farm income is anticipated. This situation, coupled with the removal of acreage limitations on all crops except tobacco and peanuts has increased the demand for farm land. Investors and others with surplus funds seeking a hedge against possible inflation also have added to the demand. These considerations also have served to limit the number of farms on the market. Present owners are reluctant to sell, even at current prices, because of the higher level of farm earnings in prospect and the lack of other investments that will yield as large a return.

Prospective buyers are apparently experiencing little difficulty in obtaining sufficient credit to finance their purchases. About two-fifths of all farms purchased in recent years have been for cash, and down payments on credit-financed purchases have averaged between 45 and 50 percent of the purchase price. All major classes of lenders have shown a substantial increase in both the number and dollar-value of farm mortgages during the last half of 1950. Only a portion of these mortgages were used to finance new farm purchases, however, but the increase in farm mortgage borrowing indicates that little difficulty is experienced in obtaining mortgage credit.

The preliminary estimate of the gross value of rental payments in 1950 was about 6 percent higher than the revised estimate for 1949. Cash rents were essentially unchanged from a year earlier, but the value of crop-share rents was 7 percent higher, reflecting the higher level of prices of most farm products during the fall of 1950. Landlords'expenses were higher than in 1949, due mainly to the 12 percent increase in real estate taxes on rented land.

Preliminary estimates place the value of net rent obtained from cash rents, crops, livestock and government payments, at 1.8 billion dollars in 1950. This is 12 percent higher than the revised estimate for 1949, but it is still lower than net rentals in 1946, 1947 and 1948. The net rent for 1950 represents a return of slightly less than 7 percent on an investment valued at about 27 billion dollars on March 1, 1951. This rate of return is slightly below the revised rate for 1949 due to the fact that farm real estate values increased more than net rents during this period.

## Interest, Taxes, and Insurance

Interest payments - Total interest charges on farm-mortgage debt are expected to be about 9 percent higher in 1951 than a year earlier, and about 32 percent above 1946 when such charges were lower than in any year since 1910. This year's increase will again result from the expansion of outstanding mortgage debt rather than from a significant change in the average rate of interest. The average rate of interest paid on farm-mortgage loans will be very nearly the same in 1951 as in 1950.

Total interest costs on farmers' non-real-estate debt (excluding Commodity Credit Corporation price support loans) are expected to be from 15 to 20 percent higher during 1951 than in 1950. This 1951 level will be more than double 1945, the year World War II ended.

Increased credit costs during last year have resulted mainly from a large expansion in the volume of credit used by farmers. Higher wage rates and higher prices paid for equipment, livestock, and other items needed in farm production have been important causes of higher borrowings. Also, many farmers have recently expanded livestock feeding operations, and especially since the start of the war in Korea, there has been considerable forward buying by farmers of machinery, automobiles, and consumer durable goods for which credit has been used.

Interest rates on non-real-estate credit also have increased. Some lenders this year have increased rates to farmers by as much as one-half of 1 percent because of higher operating expenses and higher costs for loan funds.

The large volume of non-real-estate debt is significant for reasons other than the interest cost to farmers. Because of its short-term character, large repayments of principal are a near term requirement; and these principal payments will reduce the cash that farmers will have available for other purposes.

Taxes - Farmers in most States can expect to pay somewhat higher taxes in 1951 than they did in 1950. All levels of government - local, State, and Federal - will need larger revenues to meet increasing costs and expanding services which to some extent grow out of the defense effort.

Local governments continue to rely chiefly upon property taxes to provide most of the funds to meet the growing expenditures for public services, including school, road, and welfare activities. Preliminary indications are that farm real estate taxes levied in 1950, and payable largely in 1951, will average about 4 or 5 percent higher than in the previous year. If these prove to be correct, average taxes per acre will approximate $0.64 compared with $0.61 levied in 1949 and will again set a new all-time record. The index of farm real estate taxes per acre levied in 1950 (1909-13=100) will approach 310 compared with the previous record level of 296 in 1949. Taxes on personal property also are expected to be higher.

Taxes per $100 of full value, on the other hand, probably will be somewhat lower, as farm real estate values are expected to rise more than taxes. To the extent that higher real estate values reflect higher current incomes, they indicate some improvement in the tax-paying ability of farmers; but there is some evidence that the higher prices for real estate are caused partly by people buying as a hedge against inflation.

State governments also have had increasing need for revenue, and as a consequence taxes other than those on property will be increased. This is highly probable for 1951, as nearly all State legislatures will be in regular session. Proposed legislation indicates that some additional States may adopt sales taxes, whereas others that already have them will increase their rates or coverage. Special excises, such as those on alcoholic beverages, tobacco, and gasoline, may be increased in some States. Some States may increase income tax rates, and it is possible that others may adopt this source of revenue. These higher or new taxes may be offset partly by the lowering or elimination of others, but the net result will undoubtedly be a larger tax bill in the aggregate.

Tax needs of the Federal Government can be expected to increase in 1951 as the defense program develops. Higher income tax rates have been in effect since October 1, 1950 and further increases are under discussion. Payments of these taxes by farmers in 1951 may show no increase because they are paid on the 1950 farm income which was lower than 1949 but 1951 is expected to be a year of higher incomes. Although income taxes are not costs in a technical sense they have a direct bearing upon the cash funds that farmers have to spend.

In addition to an increase in income tax rates, the Federal Government has proposed to expand revenues by raising special excise rates, such as those on alcoholic beverages, tobacco, gasoline, and luxuries. Added to the increases expected from other levels of government, these higher rates leave little doubt that farmers as well as other groups will pay substantially higher taxes in 1951 than in 1950 and probably will continue to do so for some years to come.

Insurance - Insurance carried by farmers' mutual fire insurance companies totaled about $25 billion on January 1, 1951 - about 8 percent more than was in force on the same date the year before. This compares with increases of about 9 percent in 1949 and 12 percent in 1948. The slower rate of increase is not expected to continue if property values and building replacement costs continue upward.

Losses on farm property paid from insurance carried by farmers' mutuals also increased in 1950, continuing the upward trend which was interrupted in 1949 for the first time since 1942. Losses are expected to increase as the amount of insurance carried increases; however, losses per $100 of insurance also increased in 1950. They amounted to 14.2 cents, compared with 13.8 cents in 1949 and 18 cents in 1948.

The expenses of farm mutuals are comparatively low, and have tended to decrease - per $100 of insurance - with increases in volume carried. They averaged about 9.1 cents in 1948, 8 cents in 1949 and 7 cents in 1950. Thus the total cost to the farmer averaged about 27 cents in 1948, 22 cents in 1949 and 21 cents in 1950. The cost in 1950, per $100 of insurance, was about 16 percent lower than it was in 1940.

The safety or reserve funds of farm mutuals have increased steadily for many years in total amount and also per $100 of insurance, because of the increase in volume of insurance carried. Such reserves belong to farmer-members, and the companies draw upon them to help pay losses in years when losses are heavy - thus helping to stabilize year to year assessment rates to farmers. The reserves of farm mutuals amounted to about 48 cents per $100 of insurance in 1948, 51 cents in 1949 and 52.5 cents in 1950.

## Cost Changes by Type of Farm

Costs per unit of product on groups of commercial family-operated farms have differed considerably from year to year. In general they are much above prewar levels, but have not increased as rapidly as prices paid for goods and services used in production. During the past 3 years prices paid by farmers averaged slightly more than double the prewar 1935-39 average. During the same period, however, costs per unit of production for several important types of family-operated farms averaged less than double the prewar average. Unit production costs have gone up less rapidly on many farms because of increased size of farm, higher yields and larger output, and increased production efficiencies.

Compared with prewar, unit production costs generally have gone up more on livestock farms than on crop farms (table 5). Although output per farm has been higher than in the prewar years on all farms the increase has been greater on crop farms than on livestock farms. Fewer developments in labor-saving equipment have been available to livestock farmers, particularly dairy farmers, and they have had less opportunity to increase the size of their operating units than have crop farmers.

Hybrids and other higher yielding varieties of seeds and favorable weather in recent years have been particularly favorable to crop producers. During the past 3 years corn, soybean, and oat yields on Corn Belt farms have averaged 170, 140, and 142 percent respectively of the prewar 1935-39 average. During the same period wheat yields on winter wheat farms averaged about 215 percent of the 1935-39 average. In 1951 winter wheat farms obtained fairly high yields whereas, yields on winter wheat-grain sorghum farms were comparatively low. This accounts for most of the higher unit costs in 1950 on wheat-grain sorghum farms than on the winter wheat farms farther north.

In 1950 unit production costs were about the same or slightly higher compared with 1949 for dairy and hog-dairy farms. They were about the same for Corn Belt farms, but with the exception of wheat-grain sorghum farms they were lower for wheat farms. Primarily because of smaller harvested averages and lower yields of lint cotton unit production costs in 1950 were higher than in 1949 on Southern Plains and Black Prairie cotton farms. Although cotton acreage was cut in 1950 by about one-fourth on the Mississippi Delta farms, total production was only slightly lower than in 1949 because cotton yields were higher in 1950. Unit costs, however, were lower in 1950.

Indexes of costs per unit of production (excluding price change) provide a measure of changes in quantities of goods and services used in production per unit of output. Cost charges measured this way have varied among types of farms, but in most instances they have been low relative to

Table 5.- Cost of production per unit of product, commercial family-operated farms by type, selected years

(Index numbers 1935-39=100)

| Item | Cost per unit of production | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | At current prices | | | | Excluding price changes | | | |
| | 1935-39 | 1948 | 1949 | 1950 1/ | 1935-39 | 1948 | 1949 | 1950 1/ |
| | Index | Index | Index | Index | Index | Index | Index | Index |
| **Dairy farms** | | | | | | | | |
| Central New York | 100 | 200 | 204 | 194 | 100 | 90 | 97 | 93 |
| Southern Wisconsin | 100 | 201 | 176 | 200 | 100 | 88 | 77 | 88 |
| **Corn Belt farms** | | | | | | | | |
| Hog-dairy | 100 | 184 | 185 | 191 | 100 | 76 | 76 | 79 |
| Hog-beef-fattening | 100 | 133 | 144 | 141 | 100 | 58 | 60 | 61 |
| Hog-beef raising | 100 | 142 | 163 | 161 | 100 | 62 | 70 | 70 |
| Cash grain | 100 | 147 | 171 | 174 | 100 | 69 | 78 | 79 |
| **Spring wheat farms (No. Plains)** | | | | | | | | |
| Wheat-corn-livestock | 100 | 127 | 175 | 146 | 100 | 57 | 77 | 65 |
| Wheat-small grain-livestock | 100 | 101 | 116 | 99 | 100 | 44 | 51 | 44 |
| Wheat-roughage-livestock | 100 | 89 | 130 | 105 | 100 | 41 | 60 | 50 |
| **Winter wheat farms (So. Plains)** | | | | | | | | |
| Wheat | 100 | 81 | 100 | 81 | 100 | 38 | 46 | 38 |
| Wheat-grain sorghum | 100 | 80 | 75 | 106 | 100 | 38 | 35 | 50 |
| **Cotton farms** | | | | | | | | |
| Southern Plains | 100 | 221 | 159 | 177 | 100 | 89 | 56 | 71 |
| Black Prairie, Texas | 100 | 265 | 236 | 264 | 100 | 103 | 87 | 105 |
| Delta Area, Mississippi 2/ | 100 | 174 | 222 | 176 | 100 | 74 | 105 | 83 |

1/ Preliminary.
2/ Two-mule farms.

prewar averages. This indicates that farmers generally are now producing more efficiently than 10 or 15 years ago. It also shows that farmers who have been able to take advantage of labor-saving equipment and increase size of operating unit and output have reduced physical costs most. The sharp decline in this index on the wheat farms are due in large part to the much more favorable yields in the 1940's than during the 1935-39 period.

Compared with prewar, production per hour of man labor in recent years on many of these farms has increased by 50 percent. It has more than doubled on some of the wheat farm types.

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# THE Farm Cost SITUATION

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## GENERAL SITUATION

Production costs continued to rise during 1951. Total farm production expenses in 1951 probably are averaging about 12 percent above 1950, their previous record high. In the year ahead, still climbing, they may average about 5 percent higher than in 1951.

Supplies of products used in farm production are expected to be adequate to meet requirements for a large output of food and fiber in 1952. But some items will be relatively more scarce next year than they have been so far in the mobilization period. Even though the total production and supply of nearly all basic materials will be at peak levels during the next six months, defense needs will take substantial quantities of many materials. Efforts will be made to obtain materials needed by farmers to meet production goals. However, it will be necessary for

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## Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39=100)

| Year | Commodities, interest, taxes and wage rates 1/ | Commodities only | Feed | Live-stock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 2/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 75 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 77 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 81 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 83 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 121 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 140 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 153 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 162 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 118 | 103 | 100 | 71 | --- | --- | 105 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 119 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 128 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 129 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 131 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 128 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 129 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 132 | 119 | 132 | 146 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 132 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 124 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 106 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 92 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 87 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 94 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 82 |
| 1935 | 98 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 99 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 106 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 100 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 105 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 122 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 155 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 191 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 203 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 209 | 199 | 200 | 324 | 144 | 200 | 180 | 177 | 218 | 141 | 194 | 352 |
| Jan. | 203 | 191 | 191 | 283 | --- | 199 | --- | --- | --- | --- | --- | 349 |
| Feb. | 203 | 191 | 190 | 294 | --- | --- | --- | --- | --- | --- | 197 | --- |
| Mar. | 204 | 193 | 191 | 306 | 140 | 198 | 178 | 175 | 206 | --- | 194 | --- |
| Apr. | 206 | 194 | 194 | 310 | --- | --- | --- | --- | --- | 141 | 194 | 353 |
| May | 209 | 198 | 204 | 326 | --- | --- | --- | --- | --- | --- | 194 | --- |
| June | 209 | 199 | 202 | 331 | 141 | --- | 179 | 176 | 211 | --- | --- | --- |
| July | 210 | 201 | 206 | 331 | --- | 198 | --- | --- | --- | --- | --- | 355 |
| Aug. | 210 | 201 | 207 | 327 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 212 | 202 | 203 | 340 | 146 | 201 | 182 | 178 | 226 | 141 | 189 | --- |
| Oct. | 212 | 202 | 201 | 341 | --- | --- | --- | --- | --- | --- | --- | 353 |
| Nov. | 213 | 205 | 204 | 349 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 216 | 207 | 210 | 355 | 149 | 204 | 183 | 179 | 229 | --- | --- | --- |
| 1951 | | | | | | | | | | | | |
| Jan. | 223 | 213 | 219 | 381 | --- | 203 | --- | --- | --- | --- | --- | 372 |
| Feb. | 227 | 218 | 222 | 407 | --- | --- | --- | --- | --- | --- | 193 | |
| Mar. | 229 | 221 | 224 | 415 | 150 | 212 | 188 | 183 | 239 | --- | 195 | |
| Apr. | 234 | 223 | 225 | 426 | --- | --- | --- | 184 | --- | 149 | 198 | 396 |
| May | 233 | 221 | 227 | 392 | --- | --- | --- | --- | 241 | --- | 197 | --- |
| June | 232 | 220 | 222 | 394 | 150 | --- | 197 | 191 | | --- | --- | --- |
| July | 231 | 219 | 221 | 389 | --- | 213 | --- | --- | --- | --- | --- | 393 |
| Aug. | 231 | 220 | 221 | 392 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 233 | 222 | 223 | 402 | --- | --- | --- | --- | --- | 150 | 199 | --- |

1/ Revised.
2/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices", Bureau of Agricultural Economics, January 31, 1950.

farmers to meet production goals. However, it will be necessary for farmers to anticipate their needs and make them known well in advance so that dealers can place orders and have supplies on hand when needed.

For the first 9 months of 1951 prices paid by farmers for commodities used in production averaged about 10 percent higher than for the full year 1950. Prices of all important groups of items used in production are higher than a year ago. Prices paid range from about 6 percent higher for fertilizer and motor supplies to 24 percent for purchased livestock. An increase in prices paid for replacement and feeder livestock and for feed means higher costs to the farmer who buys these items but also higher income to the farmer who sells them. The price of building materials has increased the most (11 percent) of any group of non-farm origin.

Farm output in 1951 is expected to be a record high; about 4 percent higher than in 1950, and 2 percent higher than in 1948, the previous peak. In order to get this higher production in 1951, farmers had to buy more production goods and services. The large volume bought at higher prices accounts for the new peak in production expenses.

The somewhat higher cost rates in prospect for 1952 places a high premium on cost reduction and efficient operation. In view of the relatively scarcity of some production goods, farmers will find it desirable to anticipate later needs and to make substitutions, if possible, for acarce and relatively high price items.

The supply of farm labor is expected to be smaller in 1952, and difficulties will be encountered in getting adequate numbers of workers in many local areas. But the labor supply is expected to be adequate to keep farm production at a high level. A moderate increase in wage rates is expected.

Production of farm machinery was generally adequate in 1951. However, the rate of production in the last quarter was considerably less than in the first half, and production in the first quarter of 1952 will be lower still. These reductions raise some real questions as to the adequacy of future supplies of farm machinery, even though supplies of new machines, repair parts, and attachments are currently sufficient to meet most needs for planting 1952 crops (with the exception of some of the newer and larger labor saving machines). Prices of farm machinery are now about 10 percent higher than in 1950, and are expected to continue higher in 1952.

The total supply of feed concentrates for the 1951-52 feeding season is about 3 percent below the past two seasons, which were the highest on record. The number of grain-consuming livestock to be fed in 1951-52 is expected to be about 2½ percent greater than a year ago. As a result, feed concentrate consumption in the year beginning October 1, 1951 will exceed 1951 production and reduce carry-over. Prices received by farmers for feed grains and hay are higher than a year ago. Commercial feeds also are higher except for meat scraps. Returns per dollar of feed cost, however, are generally above the prewar average. They are above a year ago for eggs, milk, butterfat, beef cattle and sheep, but lower for hogs and chickens.

The current supply of clover, grass, and winter cover crop seeds is down slightly from a year ago, but considerably above the 1940-49 average. Prices of most legume and grass seeds are now slightly lower than last spring.

Total supplies of fertilizer for the 1952 crop season will average only slightly higher than for the past season and probably will not be sufficient to meet prospective demand. Supplies of phosphoric acid fertilizers are likely to be about 8 percent below those for last season. Supplies of nitrogen and potash fertilizers for the next crop season will also be very tight, even though they may be a little greater than this year--

perhaps as much as 5 percent greater. Farmers in many areas can substitute nitrogen and potash, and also rock phosphates to some extent for the relatively scarce phosphoric acid fertilizers. Fertilizer prices are about 6 percent higher than a year ago and are expected to average slightly higher in 1952.

The supply of pesticides generally was adequate for farmers' needs in 1951. Production of preferred pesticides such as DDT and benzene hexachloride were increased substantially in 1951. Supplies of most important pesticides except those containing sulphur, lead and copper are expected to be sufficient to meet demands in 1952 if minimum needs can be purchased early, and if farmers use substitutes or alternate compounds in a few cases where the materials they have generally used may be inadequate. Liquid grain - fumigants may be in tight supply.

Prices of pesticides rose sharply at the beginning of the 1951 season and have remained at about the same level throughout the season. They are expected to continue near present levels in 1952.

Supplies of most building materials are expected to be adequate to meet needs in 1952, but supplies of aluminum, copper and some other metal products will be tight.

Current costs of building materials, supplies and fencing materials are about 11 percent above last year's average. They are expected to continue at about this point or slightly higher during the next new months.

Farmers who rented land on a cash or crop share-cash basis in 1951 probably paid the highest rental rates on record. Some further increase is expected in 1952. Landlord's expenses on leased lands in 1951 are expected to total about 7 percent more than in 1950, with expenditures for building depreciation and repair, cotton ginning and feed up the most. Net rental income in 1951 may be about 10 percent higher than in 1950, but 15 percent less than in 1947.

Interest changes on farm mortgage debt in 1951 will be about 9 percent higher than in 1950. A further increase is expected in 1952 as a result of a higher volume of debt and a slight increase in interest rates on new mortgage loans.

Taxes also increased in 1951 and farmers can expect to pay still more taxes in 1952. The increase next year will reflect higher tax rates in almost every important tax paid by farmers. Assessment rates of farm mutual fire insurance companies averaged slightly lower in 1950 than in 1951, but rates on windstorm increased because of heavy windstorm losses in some areas in 1950.

## Farm Labor

A smaller supply of farm labor and a moderate increase in farm wage rates are expected in 1952. Greater difficulties will be encountered in getting an adequate number of workers in many local areas. But the labor supply next year is expected to be adequate to keep farm production at high levels if effective recruitment campaigns are conducted.

Farm wage rates in 1951 are averaging about 10 percent higher than last year (table 1). High non-farm employment and a smaller labor supply on farms will likely result in a further rise of around 5 percent in wage rates in 1952. The extent of the rise in particular areas may be affected by developments in the wage stabilization program for agriculture.

Several factors will tend to decrease the supply of agricultural workers in the year ahead. Estimates are that defense industries may absorb about 2.5 million additional workers by the end of 1952. Part of these will come from normal growth in the labor force and part from drawing extra workers into the labor force. But as unemployment is now near a minimum level, most of the remaining additions to defense industry employment will have to come through shifts from other industries, including agriculture.

The armed forces will continue to draw on the farm labor force. However, the rotation system will mean additional inductions. With the 1951 crop season nearing its close, it is expected that there will be an increase in the number of young farmers inducted into the armed forces during the winter months. Under the operation of the Universal Military Training and Service Act, deferments may be fewer and renewed less frequently, with possibly more emphasis on postponement of induction. There will be some return of workers to farms through release from the armed forces. Those returning generally will be older and more experienced than those inducted. Nevertheless, farmers will face the problem of making provisions for replacing workers who are drafted.

Because of the anticipated losses of farm workers to both industry and the armed forces, the supply of year-round workers will continue to be tight.

The supply of seasonal workers also is expected to decline next year. In addition to the losses to industry and the armed forces, it is possible that stricter controls on the entry of "wetbacks" from Mexico may decrease the seasonal labor supply below that of 1951, especially in the Southwest. A record high number of "wetbacks" appear to have entered the country so far this year. Most needs for seasonal workers in 1952 probably could be met from domestic sources if there are vigorous recruitment and training programs. However, there will be an increased demand for foreign workers to supplement local supplies in some areas. The present international agreement with Mexico expires February 11, 1952 and will require renegotiation.

In agriculture as a whole, technological progress and increasing productivity of farm labor will continue to cushion the effects of further decreases in the labor supply next year. Output per man-hour on farms is now at a near-record level and is expected to rise even higher next year. Thus, in terms of the overall average, labor costs per unit of farm output should not change greatly despite the expected rise in farm wage rates. However, a great many farmers are likely to feel the pinch of rising wage rates, owing to their inability to make significant increases in output per hour.

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-51

(Index numbers, 1935-39 = 100)

| Period or year | Farm employment |  |  | Man-hours of farm work 2/ | Farm output 3/ |  | Gross farm income per man-hour 4/ | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
|  | Total 1/ | Family 1/ | Hired |  | Total | Per man-hour |  |  |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 103 | 98 | 110 | 112 | 107 | 107 |
| 1941 | 98 | 97 | 101 | 97 | 114 | 118 | 135 | 125 |
| 1942 | 98 | 97 | 101 | 101 | 128 | 127 | 176 | 163 |
| 1943 | 97 | 97 | 96 | 100 | 125 | 125 | 219 | 217 |
| 1944 | 95 | 97 | 88 | 100 | 130 | 130 | 231 | 263 |
| 1945 | 93 | 96 | 83 | 95 | 129 | 136 | 255 | 297 |
| 1946 | 95 | 98 | 85 | 93 | 134 | 144 | 298 | 320 |
| 1947 | 96 | 98 | 88 | 91 | 129 | 142 | 362 | 346 |
| 1948 | 95 | 96 | 91 | 90 | 141 | 157 | 369 | 365 |
| 1949 | 92 | 93 | 89 | 90 | 140 | 156 | 341 | 354 |
| 1950 | 89 | 90 | 85 | 84 | 138 | 164 | 374 | 352 |
| 1951 6/ | 86 | 87 | 83 | 89 | 144 | 162 | 403 | 389 |

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1/ Includes farm operators and members of their families working without wages.
2/ Total man-hours of farm work in terms of the time required by average adult male workers.
3/ Net calendar-year production for eventual human use.
4/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1951.
5/ Simple average of quarterly indexes seasonally adjusted.
6/ Preliminary. Estimate of farm output for 1951 based chiefly on October 1951 report of the Crop Reporting Board.

## Farm Power and Machinery

Costs of farm machinery and power in 1952 are expected to be above the 1951 record high. Retail prices of farm machinery, tires and motor fuel in 1951 were the highest in history. A continuation of the high 1951 prices for these items, and some further moderate price increases, is in prospect for 1952. Feed costs per head for keeping workstock in 1952 probably will be somewhat below the peaks of 1948 and 1947, but higher than for other recent years.

Current wholesale prices of farm machinery are at new highs, and about 10 percent above the average for the first half of 1950. Most of the recent price increases took place in the last half of 1950 following the Korean outbreak. Wholesale prices now are about 1 percent higher than in December 1950.

Production of farm machinery was at a high level the first half of 1951, but production in the last half of 1951 will be at a lower level. For 1951, as a whole, the total output of farm machinery probably will be near the level of 1949.

With farm incomes at relatively high levels and with further reductions expected in the farm labor force, demand for farm machinery in 1952 is expected to continue strong. Beginning with June 1951, farm machinery manufacturers have been allocated materials with which to produce farm machines. It is expected that materials will continue to be allocated to manufacturers in 1952. The DPA allotments of controlled materials for the first quarter of 1952 announced October 12 should permit production of agricultural machinery at 80 to 85 percent of the 1949-50 level. Supplies of new machines, repair parts, and attachments are likely to be adequate to attain farm production goals in 1952. However, supplies may be relatively short for some of the newer larger labor-saving machines.

The dollar value of exports of farm machinery in the first half of 1951 was about one-fourth larger than in the same period in 1950 and about the same as the high exports during 1949. The volume of machinery exported in the first six months of 1951 was about 13 percent higher than in the same period in 1950, but about 10 percent lower than in the first half of 1949. The increase in exports this year has occurred notwithstanding reduced shipments to most European countries. The export demand for machinery is reported to be strong, but the volume of exports in 1952 will be influenced to a considerable extent by the volume of production and by the domestic demand for machinery in this country.

Farmers' purchases of machinery have been large for more than a decade. The exception was in 1943 when output of farm machinery was drastically reduced by wartime restrictions. Preliminary estimates indicate that on January 1, 1951 there were 4,100,000 tractors of all kinds on farms in the United States. On January 1, 1940 there were only 1,545,000 tractors. In 1940 few of the tractors were of the garden type whereas in 1951 about 7 percent were of this type.

On January 1, 1951 the total volume of machinery and equipment on farms other than the power machines was about 170 percent greater than in 1940. In view of the large purchases being made in 1951, total machinery on farms on January 1, 1952 will show a further increase.

The number of work animals (horses and mules 3 years old and over) on farms now is the lowest in more than a century (table 2). Their number has

Table 2.- Horses and mules and tractors on farms and cost of keeping horses and mules and of using farm tractors, United States, 1935-39 average and 1940-51 1/

(Index numbers 1935-39 = 100)

| Calendar year or period | Tractors on farms, number January 1 | Horses and mules on farms, number: all ages January 1 | Colts under 1 year on farms, number January 1 | Horses and mules all ages, value per head January 1 | Feed cost per head 2/ | Prices paid by farmers for: New tractors 3/ | Prices paid by farmers for: Gasoline | Prices paid by farmers for: Tires 6.00 x 16 |
|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 124 | 92 | 101 | 90 | 94 | 96 | 95 | 92 |
| 1941 | 135 | 90 | 98 | 81 | 104 | 101 | 99 | 95 |
| 1942 | 152 | 87 | 85 | 78 | 132 | 102 | 103 | 117 |
| 1943 | 169 | 84 | 69 | 95 | 174 | 99 | 103 | 130 |
| 1944 | 178 | 80 | 62 | 98 | 196 | 111 | 103 | 136 |
| 1945 | 195 | 76 | 54 | 86 | 192 | 113 | 103 | 131 |
| 1946 | 208 | 70 | 41 | 80 | 221 | 126 | 106 | 133 |
| 1947 | 225 | 64 | 35 | 84 | 283 | 142 | 118 | 127 |
| 1948 | 253 | 58 | 31 | 79 | 297 | 158 | 131 | 128 |
| 1949 | 281 | 52 | 27 | 72 | 230 | 174 | 134 | 124 |
| 1950 | 307 | 47 | 22 | 63 | 240 | 175 | 135 | 139 |
| 1951 | 4/ 330 | 43 | 18 | 56 | 5/ 270 | 6/ 189 | 7/ 136 | 7/ 165 |

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1/ The 1935-39 averages were: horses and mules all ages, 15,750,000 head; value per head, $97.68; feed cost per head, $39.34; colts under one year of age 744,000 head; tractors, 1,244,000; prices paid by farmers for new tractors, $1,106; gasoline $0.19; and tires, $12.70.

2/ Based on 25 bushels each of oats and corn and 2 tons of loose hay.

3/ Tractor prices are for medium size (20-29 BHP) wheel tractor equipped with rubber tires.

4/ Preliminary estimates.

5/ Average of the first 8 months.

6/ Average prices paid in March.

7/ Average prices paid in March and June.

declined each year since 1923, but at a greater rate in recent years. The number of work animals available for work on the 1952 crops will be only about 25 percent of the peak number of 1923. The number of motor trucks has been increasing. The estimate for January 1, 1951 of 2,350,000 motor trucks on farms represents an increase of about 125 percent since 1940 and of 60 percent since 1945.

## Feed

Prices received (and paid) by farmers for feed grains and hay are about 11 percent higher than a year ago, and are likely to continue higher in 1952. Prices paid for commercial mixed feeds and of most other byproduct feeds also are higher. However, feed prices in general average a little lower now than six months ago. Feed grain prices in 1952 are expected to increase somewhat from present levels and may average about 5 percent higher than in 1951. Protein feeds may not be as high relatively as the feed grains because of the comparatively larger supply, but total feed costs in the next 6 months will average higher than in the same period last year.

Total feed supplies in relation to livestock numbers are smaller than last year. More feed will be used in the current feeding year than was raised in 1951.

The supply of feed grains and other concentrates totals about 176 million tons for the 1951-52 season, about 3 percent less than the record high supply of the two preceding seasons (table 3). Production of feed grains this year probably will be about 5.4 million tons below 1950. Supplies of byproduct feeds will be large. Oilseed cake and meal supplies will be larger than ever before, the principal increase being in cottonseed cake and meal.

The number of grain-consuming livestock to be fed in 1951-52 is expected to be about 181 million animal units, up about 2½ percent from 1950-51. The chief increases are in hogs, poultry, and beef cattle. Livestock will consume 138 million tons of concentrates, if the rate of feeding is the same as last year. Assuming that 19 million tons of concentrates will go for seed, food, industry, and exports, the carryover of concentrates at the end of the 1951-52 season would be about 20 million tons, or down about one-third from this year. Thus the total estimated requirements of feed concentrates exceed estimated production from 1951 crops by 9 million tons, with a corresponding reduction in stocks.

The alternative of larger feed grain crops or lower livestock production seems unavoidable in the next few years, although more efficient use of feed can help improve the prospects. Table 4 indicates that over 60 percent of the feed concentrates are used for hogs and poultry. Tight feed supplies therefore would have the greatest effect on these two classes of livestock.

Hay supplies in most of the northern half of the country are ample for the livestock to be fed, in 1951-52, although the quality may be below the average. Hay supplies are short locally in many southern areas because of dry weather. Pasture conditions in September and October were below average in most of the States from Ohio and Pennsylvania south to the Gulf and in much of the Southwest and the Pacific Northwest.

Table 3.- Feed concentrate supply and utilization and livestock fed, United States, 1937 to 1951 1/

| Year beginning October | Supply | | | | Utilization | | Stocks of feed grains: end of year 2/ | Animal units grain-consuming livestock fed annually | Production feed grain per animal unit | Supply concentrates per animal unit | Concentrates fed per animal unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stocks feed grains beginning of year | Production feed grains | Wheat, rye and by-product fed | Total | Seed, food, industry and exports of feed grains | Concentrates fed to livestock | | | | | |
| | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million units | Tons | Tons | Tons |
| Av. 1937-41 | 16.9 | 99.3 | 19.9 | 136.1 | 12.1 | 105.0 | 19.9 | 153.1 | .65 | .89 | .69 |
| 1942 | 18.5 | 120.8 | 33.1 | 172.4 | 13.3 | 142.0 | 16.2 | 192.4 | .63 | .90 | .74 |
| 1943 | 17.8 | 112.1 | 34.6 | 164.5 | 12.8 | 138.8 | 11.6 | 193.2 | .58 | .85 | .72 |
| 1944 | 11.6 | 116.7 | 29.8 | 158.1 | 15.2 | 129.0 | 14.9 | 173.7 | .67 | .91 | .74 |
| 1945 | 14.9 | 114.4 | 25.9 | 155.2 | 13.3 | 133.3 | 10.9 | 167.8 | .68 | .92 | .79 |
| 1946 | 10.9 | 124.3 | 23.7 | 158.9 | 19.3 | 123.9 | 13.9 | 161.4 | .77 | .98 | .77 |
| 1947 | 13.9 | 95.4 | 25.1 | 134.4 | 13.6 | 112.2 | 7.9 | 155.9 | .61 | .86 | .72 |
| 1948 | 7.9 | 138.3 | 24.3 | 170.5 | 17.7 | 123.5 | 30.8 | 162.9 | .85 | 1.05 | .76 |
| 1949 | 30.8 | 125.9 | 25.8 | 182.5 | 17.2 | 133.1 | 31.2 | 170.1 | .74 | 1.07 | .78 |
| 1950 | 31.2 | 125.0 | 26.7 | 182.9 | 20.5 | 133.9 | 29.0 | 176.8 | .71 | 1.03 | .76 |
| 1951 3/ | 29.0 | 119.5 | 27.5 | 176.1 | 18.5 | 138.0 | 20.0 | 181.0 | .66 | .97 | .76 |

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1/ From Feed Statistics, page 2, December 1950, BAE, and Feed Situation, September 1951, Table 2.
2/ Stocks do not necessarily exactly equal supply less feed and other utilization because of a difference in the crop year for different feed grains. Stocks at end of 1942 exclude grain at interior mills, elevators and warehouses but at beginning of 1943 include this grain.
3/ Preliminary.

Table 4.- Percentage of feed concentrates 1/ fed to different kinds of livestock, United States, year beginning October 1951 with comparisons

| Kind of livestock | Average 1937-41 | Average 1942-44 | 1949 | 1950 | 1951 2/ |
|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent |
| Dairy cattle | 18.1 | 17.3 | 18.4 | 17.8 | 17.4 |
| Beef cattle | 8.0 | 8.0 | 11.0 | 10.5 | 10.8 |
| Sheep | 1.3 | 1.1 | .6 | .6 | .7 |
| Poultry | 21.6 | 23.6 | 24.8 | 25.6 | 26.2 |
| Hogs | 36.8 | 39.0 | 37.8 | 38.9 | 38.8 |
| Horses and mules | 11.5 | 8.0 | 4.2 | 3.5 | 3.1 |
| Other | 2.7 | 3.0 | 3.2 | 3.1 | 3.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

1/ Grains and byproduct feeds. Does not include corn in silage, or skim milk fed as a liquid.

2/ Preliminary estimates based on indications in July 1951; assumes same rate of feeding as in 1950-51.

For most livestock enterprises returns per dollar of feed cost in September are generally above the prewar average (table 5). Returns are considerably above those of a year ago except for hogs and chickens. Returns from hogs are about 18 percent below a year ago, 10 percent below the March figure, and slightly below average. Returns per dollar of feed cost for eggs, milk, butterfat, and beef are above returns six months ago. However, returns from sheep are less than then because of the decrease in the wool prices since last spring. Separate data are not available for returns to the broiler industry. But production has been expanding rapidly, indicating that returns are favorable. The Maryland State Department of Markets reported for the week of September 28 a price of 26.5 cents per pound for broilers and 5.33 cents per pound for feed. This indicates returns of \$1.42 per \$1.00 of feed, assuming $3\frac{1}{2}$ pounds of feed are fed per pound of broiler.

## Seeds

Farmers currently are paying lower prices than last spring for most legume and grass seeds. Of the 16 kinds and varieties of these seeds included in the spring and fall retail seed price surveys, prices of all except one--crested wheatgrass--are lower this fall than last spring. However, compared with prices a year ago, prices this fall are higher for 9 varieties and lower for 13. Seeds with higher prices are common and Grimm alfalfa, alsike clover, common ryegrass, Wild Winter peas, common and Willamette vetch, purple vetch, and blue and sweet lupine. On the other hand, prices are lower than last fall for red, crimson, white, and Ladino clover, Austrian Winter peas, hairy vetch, and all the grasses except common ryegrass (a winter-cover crop).

The price changes have been less than 25 percent for any of the seeds, except reseeding crimson clover and smooth brome, which are one-third lower in price this fall than last, and sweet lupine prices, which are $2\frac{1}{2}$ times those of last fall. Retail prices of the clovers and alfalfa as a group, and of the winter cover crop seeds, average the same this fall as last. Grass-seed prices average 16 percent lower than a year ago.

Table 5.- Returns per $1.00 of feed cost, United States, September 15, 1951, with comparisons 1/

| Item | 1935-39 average | September 15, 1950 | March 15, 1951 | September 15, 1951 |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.72 | 1.56 | 1.56 | 1.97 |
| Chickens | 1.84 | 1.47 | 1.61 | 1.41 |
| Milk | 1.92 | 1.89 | 1.94 | 2.03 |
| Butterfat | 1.55 | 1.37 | 1.40 | 1.53 |
| Hogs | 1.50 | 1.80 | 1.64 | 1.48 |
| Beef | 1.39 | 2.35 | 2.53 | 2.60 |
| Sheep | 1.44 | 1.92 | 2.64 | 2.04 |
| | (Index numbers 1935-39 = 100) | | | |
| | Percent | Percent | Percent | Percent |
| Eggs | 100 | 91 | 91 | 115 |
| Chickens | 100 | 80 | 88 | 77 |
| Milk | 100 | 98 | 101 | 106 |
| Butterfat | 100 | 88 | 90 | 99 |
| Hogs | 100 | 120 | 109 | 99 |
| Beef | 100 | 169 | 182 | 187 |
| Sheep | 100 | 133 | 183 | 142 |

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1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of poultry ration per pound of chicken; 7½ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lambs. It was assumed that for each 100 pounds of sheep and lamb produced 20 pounds of wool was produced from the same feed. The quantity of hay for milk cows, beef cattle and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost 1/4 as much per pound as they would if obtained from hay.

The 1951 production of 26 kinds of clover, grass, and winter cover crop seeds for which forecasts have been made is only about half as large as in 1950. The decrease was sharpest for the winter-cover crops. Fortunately, the record carryover of all these seeds at this time, which is 8 times as large as last year and 4 times the average, nearly offsets the sharp reduction from the record production of last year.

The current supply of these 26 kinds of seeds, totaling over 1 billion pounds, is 8 percent smaller than last year's record supply, but 72 percent larger than the average for the 1940-49 crops. Supplies of clover and grass seeds are each 2 percent smaller than a year ago, and the supply of winter cover crop seeds is 11 percent below. However, the supply of each group is above the 10-year average, ranging from 17 percent above for the grasses and 45 percent above for the clovers to 117 percent above for the winter cover crops. With minor exceptions, there should be enough seed of each of the 26 kinds to meet planting requirements this fall and next spring.

## Fertilizer

Fertilizer prices have risen only slightly since April 1951 when they were about 6 percent higher than in the fall of 1950. However, a further rise of about 4 or 5 percent is expected this fall.

Supplies of nitrogen (N) and potash ($K_2O$) for the 1951-52 season may each be about 5 percent higher than for the previous year. However, more would be used if the supplies were larger. The supply of phosphoric acid ($P_2O_5$) probably will be about 8 percent less than last year, because of shortages of sulfur and sulfuric acid. This means that the total quantity of all 3 nutrients probably will be only slightly higher than for the last crop season.

Nitrogen: During the 1950-51 season approximately 1,285,000 tons of nitrogen (N) were available for use by farmers. The supply for the coming season is expected to be about 1,350,000 tons, or around 5 percent larger than last year, assuming imports and exports at last year's levels. An increase in industrial demand or change in military requirements could alter this prospective increase.

A combined total of almost 600,000 tons of nitrogen is expected from several new ammonia plants which are scheduled to be under construction during the first half of 1952. Also the Morgantown Ordnance Works is expected to go into production in the first half of 1952. The Morgantown plant may contribute some nitrogen for the 1952 crop. The scheduled construction of new plants cannot be counted on to contribute much nitrogen to either the 1952 or 1953 crops, and the full effect of the expansion will not be felt until the 1955 crop.

Phosphates: The 1950-51 supply of $P_2O_5$ was about 2,235,000 tons. Some curtailment is expected in production of superphosphate owing to scarcity of sulfur and sulfuric acid. Allowing for such cutbacks and assuming normal export/import relationships, the 1951-52 supply is tentatively estimated at about 2,050,000 tons of $P_2O_5$, or about 8 percent less than in 1950-51.

The sulfur supply is tight. The overall demand for sulfur-sulfuric acid increased greatly during 1951. Production of crude sulfur during the first seven months of 1951 was approximately 42,000 tons more than during the same period in 1950. Producers' stocks have increased slightly. Sulfur exports for the year 1951 may reach a total of approximately 1,325,000 long tons, including crude and refined sulfur. This would be about 90 percent as large as exports in 1950.

New facilities are being installed, and in some cases are now operating, to recover sulfur from various sources. Methods of conservation of crude sulfur by substitution of sulfur bearing materials have been recommended, as well as the use of other materials where applicable.

By order of NPA, effective November 1, 1951, the use of sulfuric acid will be limited to 90 percent of that used in 1950. This includes the use of sulfuric acid for manufacture of superphosphate.

Potash: A record total of 1,445,000 tons of potash ($K_2O$) was available for use in the 1950-51 season. Although a substantial expansion program is under way in the Carlsbad area, the contribution of the new facilities to the 1951-52 supply is likely to be small. The probable volume of imports is uncertain. A conservative estimate of an increase of about 5 percent in the potash supply seems warranted, or about 1,515,000 tons of $K_2O$ for the 1951-52 season.

There are two new potash mining facilities which over the next year or two will add substantially to the domestic supply. One facility is expected to come into production during the spring of 1952.

With little increase in the supply of fertilizer and high demands for food and fiber, efficient use of available supplies becomes a key problem. The relatively short supply of $P_2O_5$ particularly makes it desirable to consider (1) using rock phosphate in place of superphosphate, and (2) how far the more plentiful nutrients, N and $K_2O$ may be substituted without impairing yields and increasing costs. Farmers in some areas, Illinois and Kentucky, particularly, have been using raw rock phosphate for years. Undoubtedly, rock phosphate could be used to replace some superphosphate in other areas as well. Because $P_2O_5$ from rock phosphate becomes available at a relatively slow rate heavy applications are essential to provide currently the same amount of $P_2O_5$ which would be available from a much lighter application of superphosphate. This heavier initial application requires a larger cash outlay which is more in the nature of a capital investment, similar to lime, rather than an annual expense.

Farmers in some situations and with some crops can substitute more nitrogen and potash fertilizers for smaller quantities of phosphate fertilizers and obtain equally good yields with little change in costs. Where feasible and economical, such substitutions can help alleviate the prospective shortage of phosphate supplies.

## Building Materials, Supplies and Containers

The present cost of materials used in the construction and maintenance of farm buildings is only slightly below the record high of earlier this year. It is over double the prewar level. For example, the cost of materials needed to construct a typical poultry house large enough for 200 layers (16' x 48') was about $802 in June compared with $717 a year earlier and about $300 in 1935-39.

The cost of fencing materials has gone up about 20 percent since June 1950. At that time the cost of materials required to build a mile of woven wire fence with two strands of barbed wire was about $583. The same materials which could have been bought in 1935-39 for $295 now cost about $700. (It takes a mile of fence to enclose a square field of 40 acres and more than a mile if the field is oblong).

Even though the total production and supply of practically all basic materials will be at a peak rate during the next six months, defense needs will take a substantial amount of some materials so that a part of the civilian demand will not be supplied. However, the essential place which agriculture has in the present emergency is recognized, and efforts are being made to insure that agriculture will get at least the minimum materials needed to meet production goals. Farmers should figure out well in advance their needs for scarce materials and supplies, in order to be sure of getting the amounts needed.

Galvanized products such as wire fencing, roofing, sheet metal siding, and pipe, and aluminum roofing and siding will be the most difficult to obtain. Production is already down and a drastic reduction is in prospect for the remainder of the year with no improvement in sight for next year. The production of aluminum roofing and siding in the first nine months of 1951 was only 60 percent of 1950 production. Black pipe, painted wire fencing, and uncoated roofing to be painted at the time of use may be available to supplement galvanized materials for repair and essential construction. The supply of other steel products will vary according to shape and form. Structural steel will be strictly regulated. Nails probably will be in ample supply.

The lumber situation has eased off from the previous period of tight supply and should be ample. Plywood may get increasingly scarce as more of it is substituted for sheet metal.

Products such as builder's hardware, electrical devices, and plumbing and heating equipment are expected to be in ample supply for at least the next six months. Copper tubing, pipe, bare wire and covered wire will be short of demand but probably sufficient for the most essential farm needs.

Cement production is only slightly below capacity, but area shortages may occur because of transportation difficulties and extraordinary demands of defense programs affecting certain areas. Clay products and composition products are expected to continue in ample supply.

Production of baling wire and ties has been greatly increased and is expected to be adequate for the coming year. Likewise baler and binder twine should be adequate though the price will be considerably higher next spring than in the spring of 1951, because the price of raw materials has doubled.

The supply of burlap is ample to meet current and prospective needs. The current wholesale price is considerably lower than in the spring of 1951. The supply of cotton bags is expected to improve.

Essential farm needs for boxes, crates, and baskets will be met but efforts should be made to conserve containers wherever possible. Materials will be available to repair and replace milk cans but the total number of cans in use cannot be increased without increased allocation of material.

## Pesticides

Prices of pesticides in 1952 are expected to continue at about the same level as in 1951. Prices of some important pesticides rose sharply at the beginning of the 1951 season, and have remained at the higher level throughout the season.

The supply of pesticides generally has been adequate for the 1951 crop. Production of the preferred pesticides was increased in 1951 substantially above that of 1950. About 25 percent more DDT and 50 percent more benzene hexachloride were produced in 1951 than in 1950. The increase in production of the preferred pesticides served to restore stocks of most pesticidal materials to a more nearly normal position than was the case at the end of the 1950 season. Consumption of pestitides in 1951 appears to have been heavy, although infestations of the boll weevil on cotton and the European corn borer on corn were not so severe as in 1949 or 1950.

Supplies of benzene and chlorine, used in the manufacture of DDT, benzene hexachloride, methoxychlor, toxaphene, various forms of 2,4-D, and certain other synthetic pesticides probably will be adequate for next year, even though the demand for these products is expected to be greater because of the expanding use of pesticides and related agricultural chemicals. The supply of lead arsenate will be short primarily because of difficulties in obtaining lead. Copper sulphate may be in tight supply due to shortages of copper and sulphuric acid.

Sulphur is still in short supply, and will continue short next year. The amount available for the manufacture of pesticidal materials probably will be less in 1952 than in 1951. Synthetic materials are being produced to replace sulphur as the active ingredient in many pesticides, but sulphur also is required in manufacturing many pesticidal chemicals. Some additional plant capacity probably will be available for the manufacture of synthetic fungicides to take the place of sulphur and copper compounds. Also synthetic insecticides such as TEPP parathion, Aramite, sulphenone, and others used to control mites will be available to replace some sulphur.

Grain fumigants will be relatively scarce next year. Carbon disulphide and carbon tetrachloride used in the manufacture of most fumigants will be in short supply. Since the production of carbon tetrachloride, a basic ingredient in all liquid grain fumigants, is dependent upon carbon disulphide, farmers and supervisors of grain storage facilities who have a choice should plan to utilize the equally effective recommended basic formula which contains ethylene dichloride with a lesser proportion of carbon tetrachloride and does not contain any carbon disulphide. Thorough cleaning of bins and other grain storages and spraying with a residual insecticide are measures which contribute to a reduction in the need for liquid grain fumigants.

Greater uses of liquid concentrated pesticides will raise the demand for steel containers. With the limited supply of steel, some shortages may be expected. Other containers for handling pesticides also may be scarce.

Farmers have been shifting rapidly from the use of dusts to sprays for controlling insects on cotton. Also, they have been using sprays early in the season to hold down insect infestation rather than waiting until damage from insects becomes a serious threat. Sprays frequently are more effective than dusts on cotton, and can be applied throughout the day under weather conditions which preclude dusting.

Many of the pesticides not used this season can be carried over to next year if properly stored. However, oil solutions containing emulsifiers may deteriorate. Dusts can be carried over if kept in a dry place.

As the new season approaches, farmers can aid in the distribution of pesticides by purchasing their minimum needs early. Many insects can be controlled by the use of one of several kinds of insecticides. Cultural practices, such as planting insect and disease resistant varieties, planting at the proper time, maintenance of soil fertility, destruction of host crops or control of insects and diseases on them, cleaning up areas where insects hibernate, and similar practices often reduce the needs for insecticides and fungicides.

## Farm Land Values and Rentals

Farm real estate values rose 17 percent during the year ending July 1, 1951. This brought the national index to 202 (1912-14 = 100), 19 percent above the World War I peak and nearly 2½ times the 1935-39 or prewar average (table 6). Land values were at their all-time peak in nearly three-fourths of the States and were still below the World War I peak in only 11 States, most of which were in the North Central region.

The sharpest increases during the last year have occurred in the Corn Belt, the tobacco areas and in the Southwest. The July index was 20 percent or more above a year earlier in 13 States and from 15 to 20 percent higher in 17 States. During the 4 months ended July 1, however, the Southeastern and Mountain States showed the largest gains. In the Corn Belt, where the rise was especially large during the fall and winter of 1950-51, the recent increases were generally below the national average of 5 percent.

Table 6.- Farm real estate 1/: Index numbers of average value per acre and percentage change, by geographic divisions

| Geographic division | Index numbers (1912-14 = 100) | | | Change during year ending: | | Change during 4 months ending: | |
|---|---|---|---|---|---|---|---|
| | | 1951 | | July | July | July | July |
| | 1920 | March | July | 1950 | 1951 | 1950 | 1951 |
| | | | | Percent | Percent | Percent | Percent |
| New England | 140 | 163 | 167 | -1 | 4 | 1 | 2 |
| Middle Atlantic | 136 | 172 | 181 | -1 | 13 | 2 | 5 |
| E. North Central | 161 | 194 | 200 | 2 | 19 | 1 | 3 |
| W. North Central | 184 | 163 | 169 | 2 | 17 | 2 | 4 |
| South Atlantic | 198 | 255 | 268 | 0 | 18 | 0 | 5 |
| E. South Central | 199 | 298 | 314 | 0 | 17 | 2 | 5 |
| W. South Central | 177 | 225 | 235 | 2 | 20 | 2 | 4 |
| Mountain | 151 | 176 | 188 | -2 | 19 | 1 | 7 |
| Pacific | 156 | 199 | 210 | --7 | 15 | 1 | 6 |
| United States | 170 | 193 | 202 | 0 | 17 | 2 | 5 |

1/ Farm land with improvements as of March 1, except where otherwise indicated.

According to preliminary indications from an October survey of farm real estate dealers and others, the land market has remained relatively stable during the last few months. Although values have continued firm, they are not expected to show as large an increase during the last half of 1951 as during the first half. Demand continues strong, especially for the better grades of farms, but relatively few are for sale. Some tightening of credit was reported and interest rates have shown a tendency to rise. Expanding defense employment is contributing to the demand for small farms and acreages in some areas and investment buying continues to be a factor in the better land areas, although to a somewhat lesser extent than a year ago.

About 45 percent of the purchases made during the year ending March 1, 1951 were cash deals. When credit was used the down payment on the average amounted to slightly more than two-fifths of the purchase price. Probably not more than 10 percent of all purchases involve a debt of more than 75 percent of the purchase price. But the dollar debt per acre and per tract have been rising steadily and the total debt obligation of some recent buyers could still become burdensome even though it appears favorable in relation to current levels of values.

Farmers who rented land on a cash basis or who paid cash rent for pasture and hay lands in addition to a share of the crop paid the highest rates on record in 1951, and some further increase can be expected in 1952. Rental rates on farms rented wholly for cash averaged about 20 percent higher in 1951 than in 1950. The gross value of crop-share rents are expected to total about 5 percent higher but rents received from farms operated under a livestock-share lease may be up 20 percent because of the larger receipts from livestock. Total gross rents from all methods of leasing probably will be about 8 percent higher than in 1950 and about the same as the 1947 peak.

Landlord's expenses on leased lands in 1951 are expected to total about 7 percent more than in 1950, with expenditures for building depreciation and repair, cotton ginning and feed up the most. Net rental income may be about 10 percent higher than in 1950, but 15 percent less than in 1947.

The increase in net rents is substantially less than the increase in land values, however, so the rate of return on the current valuation of leased property will show a further decline. According to preliminary estimates, total net rents in 1951 will amount to about $1.9 billion from an investment currently valued at about $30 billion, or a rate of return of slightly more than 6 percent. This would be the lowest rate of return since 1940.

## Interest, Taxes, and Insurance

Interest payments - Interest charges on farm-mortgage debt in 1951 are expected to be about 9 percent higher than in 1950. A further increase is likely in 1952 as a result of an increasing volume of debt and a slight increase in interest rates on new mortgage loans.

The average interest rate on farm-mortgage loans is now 4.7 percent; slightly higher than the 4.6 percent rate which prevailed unchanged during the period 1946-50. But the main reason for the higher interest charge is the increase in the amount of farm mortgage debt. At the beginning of 1950 outstanding farm mortgage debt amounted to 5.4 billion dollars. A year later the total was 5.8 billion dollars, and on July 1, 1951 it is estimated at 6.2 billion dollars.

Interest charges on the non-real-estate debt of farmers, excluding loans made or guaranteed by the Commodity Credit Corporation, are a fifth or more higher in 1951 than in 1950. The total interest cost of short-term debts has not been so high since the period immediately following World War I. The amount of interest which will be paid during 1951 on the non-real-estate debt owed to all types of lenders might be roughly estimated at half a billion dollars.

Although there has been a slight rise in interest rates, the main cause of the increased cost of interest on short-term debts is the huge postwar expansion in use of this type of credit. The total outstanding non-real-estate debt was 7.4 billion dollars on July 1, 1951. Farmers' expenditures for both consumer and producer goods have been heavy since mid-1950 and the rise in non-real-estate debt during that period has been especially great.

On the basis of amounts borrowed from banks and federally sponsored lenders, the greatest increase in non-real-estate credit costs was in the Pacific and West South Central regions. In these States the debt to such lenders rose over a third between July 1, 1950 and July 1, 1951. In the Mountain and West North Central regions the debt level would indicate a rise in interest costs of one-fourth or more during this period. There was practically no change in interest costs on non-real-estate debt in New England.

Some further rise in the cost of non-real-estate farm credit may occur in 1952. But it is doubtful that the increase will be as great as during the year ended July 1, 1951.

Taxes -- In 1951 farmers in most States paid out more in taxes than they did in 1950, and they can expect to pay out a still larger amount in 1952. The increase next year will be reflected in about every important tax that farmers pay - property, sales, and income taxes. In some cases they will pay more because they are earning and spending more, but in general it will be because all levels of government are raising levies to get more revenue.

Property taxes, which are the chief source of revenue for local governments, have been increasing for a number of years and probably will continue to do so next year, although at a reduced rate. Those levied against farm real estate in 1950, which are largely being paid in 1951, amounted to $0.64 per acre, or about 5 percent more than in 1949. This brought the index of farm real estate taxes per acre to an all-time high of 311 (1909-13 = 100). Levies of 1951 (payable largely in 1952) probably will reflect increases in the neighborhood of 3 or 4 percent when compared with those of 1950. Taxes on personal property also have been increasing along with those on farm real estate.

State governments, which derive their revenue chiefly from sources other than property taxes, have expanded their tax collections significantly since the end of World War II. This trend probably will continue for at least another year. The legislatures in most States met in regular sessions in 1951, and many of them increased taxes of one kind or another. Three States adopted sales taxes and several others which had levied them previously raised their rates. In a number of States special excises were increased on gasoline, alcoholic beverages, and tobacco. Where reductions in some kinds of taxes were voted, they usually were offset by increases in others. There were few changes in State income tax rates, but any increase in net income will mean more income taxes.

Federal taxes also will be higher in 1952. Recent legislation made higher income tax rates effective and increased special excises on alcoholic beverages, cigarettes, gasoline, automobiles, and trucks. Some of these higher rates are to continue in effect at least until 1954.

Insurance - Fire and windstorm insurance assessments paid by farmers to farm mutual companies probably will be higher in 1951 than in either 1950 or 1949. Further increases are expected in 1952. The insurance carried by such companies has increased steadily for many years (9 percent in 1949 and in 1950). The increased assessments paid by farmers have been due primarily to increases in the amounts of insurance carried, rather than to substantial increases in rates per $100 of insurance. In fact, assessment rates of the farm mutual fire insurance companies averaged about 29.2 cents per $100 in 1950, compared with 30.9 cents in 1949. However, the windstorm losses of some of the specialized windstorm mutuals were particularly heavy in 1950, resulting in rate increases averaging about a sixth.

Part of the assessment income of a farm mutual is usually put into its safety fund in the years of below-average losses, for use in the years of heavy losses (sometimes assessments are skipped in the low-loss years). Therefore, the cost of farm mutual insurance is considered to be the sum of losses paid plus operating expenses. Based on the average amount of insurance in force during the year, the losses of the farm fire mutuals averaged 14.3 cents per $100 of insurance in 1950; 14.4 in 1949. Operating expenses averaged 7.9 cents in 1950; 8.4 in 1949, making the total cost to farmers in 1950 about 22.2 cents per $100 compared with 22.8 cents in 1949. Costs per $100 of insurance in 1950 averaged about 16 percent less than they did in 1940.

The safety funds at the end of 1950 of the farm fire mutual companies averaged 54.6 cents per $100, compared with 52.2 at the end of 1949. On the other hand, the safety funds in force at the end of 1950 of the specialized windstorm mutuals were less per $100 of insurance than at the end of 1949. They were 25.3 cents in 1950 compared with 29.8 cents in 1949.

Premiums paid in 1951 by farmers for hail insurance on growing crops were about 15 percent more than in 1950. The largest increases in the amount of insurance paid were on cotton and tobacco. However, more insurance was carried on corn than on any other crop. Because of the unfavorable prospects last winter and this spring for the winter wheat crop in the Southwest, less than the usual amount of crop-hail insurance was purchased by farmers in that area. Loss payments were about average. They were especially high in Georgia and Iowa.

Federal crop insurance was offered in 1951 in 810 counties: On wheat in 356 counties; flax, 61; corn, 98; tobacco, 69; cotton, 101; dry edible beans, 29; citrus fruits, 1; and on multiple crops, in 95 counties. The Federal Crop Insurance Corporation collected more in premiums than it paid out as indemnities to farmers during the 4-year period 1947-50.

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# THE Farm Cost SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

FCS-12 BAE MARCH 1952

FOR RELEASE
APR. 14, A. M.

Approved by Outlook and Situation Board, April 4, 1952

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## GENERAL SITUATION

Prices farmers pay for goods and services used in farm production will average higher in 1952 than in 1951. Supplies of most items are expected to be sufficient to permit high farm output, although some kinds of fertilizer probably will be short of what farmers would purchase if larger quantities were available and it may be difficult to find enough farm workers for seasonal jobs in some local areas.

Prices paid for all items used in farm production in the first three months of 1952 averaged 4 percent higher than a year earlier. Among the major groups of commodities, only feeder and replacement livestock and some of the materials used in building construction and repairs were

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## Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39=100)

| Year | Commodities, interest, taxes and wage rates | Commodities only | Feed | Live-stock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 1/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 75 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 77 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 81 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 83 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 121 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 140 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 153 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 162 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 118 | 103 | 100 | 71 | --- | --- | 105 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 119 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 128 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 129 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 131 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 128 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 129 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 132 | 119 | 132 | 146 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 132 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 124 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 106 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 92 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 87 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 94 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 62 |
| 1935 | 98 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 99 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 106 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 100 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 105 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 122 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 155 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 191 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 203 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 209 | 199 | 200 | 324 | 144 | 200 | 180 | 176 | 215 | 141 | 194 | 352 |
| 1951 | 231 | 220 | 225 | 396 | 150 | 213 | 194 | 189 | 239 | 149 | 197 | 388 |
| Jan. | 223 | 213 | 219 | 381 | --- | 203 | --- | --- | --- | --- | --- | 372 |
| Feb. | 227 | 218 | 222 | 407 | --- | --- | --- | --- | --- | --- | 195 | |
| Mar. | 229 | 221 | 224 | 415 | 150 | 212 | 188 | 183 | 239 | --- | 195 | |
| Apr. | 234 | 223 | 225 | 426 | --- | --- | --- | 184 | --- | 149 | 198 | 396 |
| May | 233 | 221 | 227 | 392 | --- | --- | --- | --- | --- | --- | 197 | --- |
| June | 232 | 220 | 222 | 394 | 150 | --- | 197 | 191 | 241 | --- | --- | --- |
| July | 231 | 219 | 221 | 389 | --- | 213 | --- | --- | --- | --- | --- | 393 |
| Aug. | 231 | 220 | 221 | 392 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 233 | 222 | 223 | 402 | 149 | 213 | 198 | 194 | 239 | 150 | 199 | --- |
| Oct. | 233 | 223 | 227 | 404 | --- | 216 | --- | --- | --- | --- | --- | 393 |
| Nov. | 234 | 223 | 233 | 389 | --- | 218 | --- | --- | --- | --- | --- | --- |
| Dec. | 233 | 222 | 240 | 356 | 152 | 219 | 199 | 195 | 240 | --- | --- | --- |
| 1952 | | | | | | | | | | | | |
| Jan. | 237 | 224 | 242 | 370 | --- | 219 | --- | --- | --- | --- | --- | 412 |
| Feb. | 240 | 227 | 243 | 376 | --- | 224 | --- | --- | --- | --- | 219 | --- |
| Mar. | 240 | 227 | 242 | 372 | --- | --- | --- | --- | --- | --- | 218 | --- |

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1/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices," Bureau of Agricultural Economics, October 30, 1951.

below 1951 levels. The relatively short feed supply compared with the number of livestock to be fed tended to depress prices of feeder and replacement livestock. Prices of building materials were down, partly because of credit restrictions which require higher down payments on new homes and partly because of relatively high output of building materials. Prices of both groups of products are expected to continue below last year. Prices of all other groups range from 4 to 14 percent above the first quarter of 1951 and are expected to continue higher than in 1951 for the remainder of the year.

For the country as a whole farmers' total production expenses in 1952 probably will average about 5 or 6 percent higher than in 1951, and the highest on record. They have risen in almost every year since 1938, as both cost rates and quantities of items used in production have increased. Total farm output in 1951 was about 39 percent higher than in 1935-39 and farm output in 1952 is expected to continue high.

Farm wage rates in January 1952 were about 11 percent higher than a year ago, and for the year as a whole probably will average 5 to 10 percent higher than in 1951. The supply of farm workers will be smaller than in 1951, and shortages are probably in local areas. In general, however, the labor supply is expected to be adequate for high agricultural production. But to get the job done it will be necessary to make good use of labor-saving devices and techniques, to make full utilization of each worker and to have effective recruitment and placement programs.

In the first three months of 1952, prices of new machinery and motor vehicles averaged about 6 and 8 percent higher than during the first quarter of 1951, and probably will remain near present levels throughout 1952. Production of farm machinery is expected to be somewhat below the comparatively high level of 1951, but supplies of most types will be sufficient to meet farmers' needs. Prices of motor supplies and machinery parts are expected to be only slightly higher than in 1951.

Prices paid for feed were about 9 percent higher during the first three months of 1952 than in the same period in 1951. Although the price of corn was not much above a year ago, prices of most by-products feeds averaged from 10 to 15 percent higher. Prices of hay were a fifth higher in most western and southern States. Livestock prices generally are below a year ago and returns for meat animals per unit of feed fed probably will average lower than in 1951. Prices for milk and butterfat are higher than a year ago. The feed supply in relation to livestock to be fed during the next few months is comparatively tight, and will continue so unless the 1952 feed crop is large.

Retail prices of many seeds averaged higher in March 1952 than a year ago. Supplies of most legume and grass seeds at the close of the 1951 harvest averaged about 9 percent smaller than the record supply a year earlier, but were nearly half again as large as the 10-year average.

Fertilizer prices this spring probably will average 4 to 5 percent higher than last fall. The total supply of fertilizers for the 1952 crop season probably will be only a little above a year ago and may not be enough to supply all that farmers would like to buy. But supplies will be sufficient to maintain production at comparatively high levels. The supply of nitrogen fertilizer for the 1951-52 season is expected to be about 7 percent above a year earlier and that of potash about 5 percent higher. Mostly because of the continued shortage of sulphur and sulphuric acid, the supply of phosphate fertilizers for the 1951-52 season probably will be about 6 percent less than last year.

Prices paid by farmers for building and fencing materials have changed little during the past 12 months, but they have averaged about 5 percent higher than in 1950. Prices of a few items, including lumber, some of which declined slightly in the last half of 1951, may advance some during 1952 but most items will be more plentiful than had been expected earlier and some prices may decline. Supplies of containers are expected to be adequate to meet farm requirements in 1952.

Manufacturers' prices of most pesticidal materials also have remained almost unchanged during the past year. With the exception of products containing copper and sulphur, supplies are expected to be generally adequate. Stocks on hand appear to be larger than a year ago, but farmers should place their orders early to assure having the materials on hand when needed. The total consumption of pesticides in 1952 is expected to be somewhat higher than in 1951.

Tax rates on farm real estate and personal property are higher than a year ago. Preliminary indications are that farm real estate taxes levied in 1951 and payable largely in 1952 will average 3 or 4 percent higher than in the preceding year. Interest rates on farm loans are slightly higher than a year ago, and debts outstanding at the beginning of 1952, both real estate and non-real estate, were considerably larger than a year earlier.

## Farm Labor

A smaller supply of farm labor and a further increase in farm wage rates are expected in 1952. Farm wage rates in January 1952 were 11 percent above those in January 1951. Wages for 1952 as a whole are expected to average 5 to 10 percent above last year (table 1).

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-51

(Index numbers, 1935-39 = 100)

| Period or year | Farm employment | | | Man-hours of farm work 2/ | Farm output 3/ | | Gross farm income per man-hour 4/ | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | | Total | Per man-hour | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 103 | 98 | 110 | 112 | 107 | 107 |
| 1941 | 98 | 97 | 101 | 97 | 114 | 118 | 136 | 125 |
| 1942 | 98 | 97 | 101 | 101 | 128 | 127 | 177 | 163 |
| 1943 | 97 | 97 | 96 | 100 | 125 | 125 | 220 | 217 |
| 1944 | 95 | 97 | 88 | 100 | 130 | 130 | 232 | 263 |
| 1945 | 93 | 96 | 83 | 95 | 129 | 136 | 257 | 297 |
| 1946 | 95 | 98 | 85 | 93 | 134 | 144 | 300 | 320 |
| 1947 | 96 | 98 | 88 | 91 | 129 | 142 | 364 | 346 |
| 1948 | 95 | 96 | 91 | 90 | 141 | 157 | 371 | 365 |
| 1949 | 92 | 93 | 89 | 90 | 140 | 156 | 343 | 354 |
| 1950 | 89 | 90 | 85 | 84 | 138 | 164 | 376 | 352 |
| 1951 | 86 | 87 | 81 | 86 | 139 | 162 | 420 | 388 |

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1/ Includes farm operators and members of their families working without wages.

2/ Total man-hours of farm work in terms of the time required by average adult male workers.

3/ Net calendar-year production for eventual human use.

4/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased somewhat more than farm wage rates from the prewar years of 1935-39 to 1951.

5/ Simple average of quarterly indexes seasonally adjusted.

There will be difficulty in getting enough seasonal workers in some local areas and the supply of year-round workers will continue tight in many local areas. In general the labor supply is expected to be adequate for continued high-level agricultural production but to get the job done it will be necessary to make good use of labor-saving devices and techniques, to make full utilization of each worker and to have an effective recruitment and placement program.

Some further loss of farm workers to both industry and the armed forces is in prospect this year. Employment in defense industries may increase by more than 2 million in 1952. Part of this increase in defense employment will come from normal growth in the labor force and part from drawing extra workers such as housewives, retired persons, and others into the labor force. The rest will come chiefly through shifts from other industries, including agriculture.

Although we have almost reached the authorized strength of 3.5 million in the armed forces, and there will be little net change in inductions from farms, there will be movements into and out of the armed forces under the operation of a rotation system. This will continue to present serious problems to agriculture, and many farmers will still face the problem of replacing workers who may be drafted.

Workers from Mexico, Puerto Rico, the Caribbean Islands and Canada will again be employed to supplement local supplies of seasonal workers in many areas.

## Farm Power and Machinery

Prices of machinery, excluding motor vehicles, rose about 9 percent in the last half of 1950. Since then there have been only moderate price increases. Prices in February 1952 were about 12 percent higher than in June 1950, and the highest on record. Prices of motor vehicles have risen slightly faster in recent months than have prices of other machinery. Since 1941, however, prices of new machinery have increased less than prices of farm products, farm incomes and farm wage rates. This relationship has been favorable to increased purchases of machinery. With large acreages of the major crops, high farm incomes and short supplies of farm labor in prospect in 1952, farmers probably will continue to purchase a large volume of new machines and equipment.

Production of farm machinery in 1952 probably will be moderately below the average of the past four years. Initial material allotments to the farm equipment industry for the first two quarters of 1952 would have permitted production at 80 to 85 percent of the requirements. However, an easing in the material supply situation has permitted modest increases in these allotments. Thus, it appears probable that production of farm machinery in 1952 may be only moderately below the rates of recent years. Sufficient machinery and equipment is in prospect to meet most of the current demands and to maintain agricultural production at a high level. The tightest spot in the equipment picture will be crawler tractors.

Complete data on farm machinery production in 1951 are not yet available. However, preliminary indications, based on the production of wheel and crawler tractors and related items, indicate that production of farm machinery and equipment in 1951 was probably higher than for any previous year.

Exports of farm machinery in 1951, in terms of dollars, were higher than for any previous year. In terms of actual volume, these exports were about 15 percent higher than the 1950 exports, but were about 3 percent below those of 1949. Foreign outlets are expected to continue to take a large volume of American machines and equipment in 1952. However, it is likely that the volume of exports in 1952 will be below the high 1951 exports.

Total volume of power and machinery (including workstock) on U.S. farms is now a record high. On January 1, 1951 it was about 70 percent higher than the average of the prewar years 1935-39 (table 2). This increase has taken place, despite a decrease during that period of about 52 percent in the numbers of horses and mules 3 years old and over.

Prices for workstock have been low and the size of the colt crop has continued to decrease. The 1951 colt crop of 122,000 head was the smallest in more than a century. Colt crops of this size would maintain a total horse and mule population of around 2,000,000 head. There were around 6,300,000 head of farm horses and mules of all ages on farms, January 1, 1952. About 93 percent were work animals (3 years old and over). Numbers of work animals on farms January 1, 1952 were only 28 percent as large as the peak number of 1923 and 48 percent of the January 1, 1940 number.

The number of all kinds of tractors on farms January 1, 1952, including garden tractors, probably was about 4,250,000. A comparatively large number of old machines have been discarded in recent years. Dealers' stocks of new farm machinery on January 1, 1952 probably are higher than a year earlier.

## Feed

Stocks of feed grains on January 1 were down 10 percent below a year earlier, and the carry-over this fall probably will be down a third from last year. Twelve percent more beef cattle, 2 percent more fall pigs being marketed, 9 percent fewer spring pigs expected to be farrowed, 3 percent more chickens in laying flocks, fewer farm chickens to be raised but a continued expansion in broilers and turkeys total up to about 2 percent more grain-consuming livestock for the year beginning last October.

Prices received by farmers for feed grains and hay in March averaged about 6 percent above those last fall (table 3). Although corn was not much higher, most byproducts feeds including the oil seed meals averaged 10-15 percent higher. The price of hay was up more than 20 percent in most Southern and Western States. The increases in feed prices

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-51

(Index numbers 1935-39 = 100)

| Year or period | Number on farms, January 1 1/ | | | | | | Volume on farms, January 1 2/ | | Gross farm income calendar year 3/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules all ages | Work stock 3 years old and over | Colts under 1 year of age | Tractors | Automobiles | Motortrucks | All machinery and equipment other than tractors and other motor vehicles | All farm power (including work animals) machines and equipment | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 119 | 106 | 105 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 126 | 110 | 132 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 140 | 116 | 179 | 148 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 157 | 121 | 220 | 179 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 161 | 121 | 232 | 183 |
| 1945 | 76 | 77 | 54 | 195 | 106 | 153 | 176 | 126 | 244 | 193 |
| 1946 | 71 | 73 | 42 | 206 | 109 | 159 | 193 | 130 | 279 | 219 |
| 1947 | 64 | 67 | 35 | 220 | 112 | 175 | 214 | 136 | 331 | 257 |
| 1948 | 59 | 62 | 31 | 240 | 108 | 195 | 247 | 145 | 334 | 266 |
| 1949 | 54 | 57 | 28 | 266 | 110 | 212 | 280 | 156 | 309 | 233 |
| 1950 | 49 | 52 | 23 | 291 | 108 | 227 | 303 | 163 | 316 | 239 |
| 1951 | 45 | 48 | 19 | 317 | 108 | 234 | 324 | 170 | 361 | 282 |
| 1952 4/ | 40 | 43 | 16 | | | | | | | |

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1/ The 1935-39 average was for horses and mules all ages, 15,750,000 head; for workstock 13,700,000 head; for colts 744,000 head; for tractors 1,244,000; for automobiles 3,896,000; and there were 973,000 motortrucks.

2/ In terms of 1935-39 prices.

3/ Includes Government payments.

4/ Preliminary.

Table 3.- Average prices of feeds in the United States, March 15, 1952 with comparisons

| Item | Unit | March 15, 1950 | March 15, 1951 | Sept. 15, 1951 | March 15, 1952 |
|---|---|---|---|---|---|
| Prices received by farmers | | | | | |
| Corn | Bushel | $ 1.19 | $ 1.60 | $ 1.65 | $ 1.65 |
| Oats | do. | .72 | .92 | .78 | .89 |
| Barley | do. | 1.10 | 1.34 | 1.17 | 1.36 |
| Sorghum grain | Cwt. | 1.93 | 2.12 | 2.12 | 2.52 |
| Hay, baled | Ton | 21.20 | 23.10 | 21.30 | 25.10 |
| Feed grains and hay, Index number (1935-39=100) | | 183 | 232 | 227 | 241 |
| Prices paid by farmers | | | | | |
| Mixed dairy feed 16% | Cwt. | 3.41 | 4.07 | 4.07 | 4.43 |
| Laying mash | do. | 4.34 | 4.92 | 4.94 | 5.29 |
| Cottonseed meal | do. | 3.74 | 4.89 | 4.40 | 5.06 |
| Soybean meal | do. | 4.11 | 4.75 | 4.77 | 5.37 |
| Linseed meal | do. | 4.26 | 4.55 | 4.42 | 5.01 |
| Meat scrap | do. | 6.15 | 6.56 | 6.29 | 6.56 |
| Bran | do. | 2.86 | 3.31 | 3.58 | 4.02 |
| Middlings | do. | 3.00 | 3.47 | 3.76 | 4.09 |
| Alfalfa hay, baled | Ton | 31.80 | 34.10 | 33.20 | 39.10 |
| Prices paid by farmers for feed, Index number (1935-39=100) | | 191 | 224 | 223 | 242 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | | |
| Fed to poultry | Cwt. | 3.40 | 4.00 | 3.99 | 4.24 |
| Fed to milk cows in milk selling areas | Cwt. | 3.01 | 3.54 | 3.62 | 3.87 |
| Fed to milk cows in cream selling areas | Cwt. | 2.62 | 3.21 | 3.26 | 3.45 |

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1/ Value of the corn, oats, oil meal, milk feed, commercial mixed feed, etc., making up 100 pounds of "grain" ration.

reflect some tightening in the feed supply situation and a continued strong demand for feed. Feed prices probably will continue higher than a year earlier at least until the prospect for 1952 crops is clear.

The index of prices received by farmers for all livestock, poultry and livestock products on March 15 was down about 10 percent from March a year ago; however, prices of eggs and hogs were around 22 percent lower and beef cattle about 7 percent lower. Milk and butterfat prices were up 8 and 13 percent respectively. Returns per dollar of feed for most livestock are lower than either a year ago or six months ago (table 4). They are much below average for hogs and eggs. Returns for beef cattle are lower than last year, but still well above the 1935-39 average. Returns for sheep are down from the high levels of a year ago and are now about 3 percent above average. Returns for milk are 1 percent above average while returns from butterfat dairying are 4 percent above average and 15 percent above a year ago. These changes represent a relative decline in position compared with March 1951 for eggs, hogs, beef cattle and sheep, and an improvement in position for butterfat dairying.

Separate data are not available for returns to the broiler industry, but production has been expanding rapidly indicating that returns in this enterprise have been favorable. The Maryland State Department of Markets reported for the week of March 13, 1952, a price of 26.0 cents a pound for broilers and 5.51 cents per pound for feed. This is a return of $1.35 per $1.00 of feed, assuming 3½ pounds of feed fed per pound of broiler. This compares with a return of $1.42 in the last week of September 1951. Prices of broilers at that time were 26.5 cents and feed 5.33 cents per pound.

## Seeds

Retail prices of 19 out of 29 seeds of legumes, grasses, and seed grains were higher on March 15 than a year earlier, and 13 of them were higher also than the 1946-50 average. Prices were higher this year than last, and also above the 5-year average, for common and Grimm alfalfa, alsike clover, Korean and Kobe lespedeza, common ryegrass, crested wheatgrass, orange sorgo, corn, and the seed grains. On the other hand, lower prices this year than last, and also lower than the average, were reported for sweetclover, white clover, Ladino clover, and timothy seeds. Largest (41 to 86 percent) advances over last year's prices were made by Korean lespedeza, orange sorgo, crested wheatgrass, Kobe and sericea lespedeza. Prices declined for nine kinds, namely, improved varieties of alfalfa, white clover, orchard grass, Kentucky bluegrass and Sudangrass, Ladino clover, sweetclover, and redtop. These dropped 3 to 16 percent below the mid-March prices of last year.

Table 4.- Returns per $1.00 of feed cost, United States March 15, 1952, with comparisons 1/

| Item | 1935-39 average | March 15, 1950 | March 15, 1951 | Sept. 15, 1951 | March 15, 1952 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.72 | 1.33 | 1.56 | 1.97 | 1.14 |
| Chickens | 1.84 | 1.56 | 1.61 | 1.41 | 1.31 |
| Milk | 1.92 | 1.82 | 1.94 | 2.03 | 1.94 |
| Butterfat | 1.55 | 1.42 | 1.40 | 1.53 | 1.61 |
| Hogs | 1.50 | 1.65 | 1.64 | 1.48 | 1.24 |
| Beef | 1.39 | 2.11 | 2.53 | 2.60 | 2.21 |
| Sheep | 1.44 | 1.67 | 2.64 | 2.04 | 1.49 |
| | | | (Index numbers 1935-39=100) | | |
| | Percent | Percent | Percent | Percent | Percent |
| Eggs | 100 | 77 | 91 | 115 | 66 |
| Chickens | 100 | 85 | 88 | 77 | 71 |
| Milk | 100 | 95 | 101 | 106 | 101 |
| Butterfat | 100 | 92 | 90 | 99 | 104 |
| Hogs | 100 | 110 | 109 | 99 | 83 |
| Beef | 100 | 152 | 182 | 187 | 159 |
| Sheep | 100 | 116 | 183 | 142 | 103 |

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1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of poultry ration per pound of chicken; 7½ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lambs. It was assumed that for each 100 pounds of sheep and lamb produced 20 pounds of wool was produced from the same feed. The quantity of hay for milk cows, beef cattle and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost 1/4 as much per pound as they would if obtained from hay.

Supplies (production plus carry-over) of 29 legume and grass seeds at the close of the 1951 harvest totaled 1.36 billion pounds, 9 percent smaller than the record supply a year earlier, but nearly half again as large as the 10-year average. Supplies are a third or more above average for such legume seeds as alfalfa and red, sweet, white, and Ladino clover; such grasses as orchard grass, smooth brome grass, red and tall fescue, bentgrass, and Bermuda grass; and such winter cover crop seeds as Austrian Winter peas, hairy vetch, crimson clover, lupine, and ryegrass. The only kinds with supplies appreciably below average are alsike clover, lespedeza, timothy, redtop, crested wheatgrass, meadow fescue, rapeseed, and common, Willamette, and purple vetch. Supplies of these were a seventh or more below average. With few exceptions, current supplies of field seeds appear to be fully adequate to meet prospective demands and leave carry-over stocks of average size.

Production of legume and grass seeds declined in 1951. Had it not been for record carry-overs of a number of these seeds, supplies of some of them would now be smaller than the requirements in recent years plus quantities normally carried over.

The Department goals recommended larger production this year than in 1951 for each of the following kinds of seed; Northern and Central-grown alfalfa, red clover, Ladino clover, Kobe lespedeza, timothy, tall fescue, smooth bromegrass, crested wheatgrass, crimson clover, hairy vetch, common and Willamette vetch, lupine, and common ryegrass. But the Department has recommended a smaller production this year than last for white clover grown in Louisiana and Mississippi, and for orchard grass, and Sudangrass. If the 1952 goals for the 16 seeds mentioned are attained and imports and exports continue at current levels, supplies for planting during the 1952-53 season are expected to be adequate and still leave a sufficient carry-over.

## Fertilizer

Fertilizer prices this spring probably will be 4 or 5 percent higher than last fall. In 1951 they averaged about 6 percent higher than in 1950.

Supplies of nitrogen (N), phosphates ($P_2O_5$) and potash ($K_2O$) combined probably will be only a little larger than in the 1950-51 cropping season. Supplies of nitrogen are expected to be about 7 percent above a year ago and those of $K_2O$ about 5 percent higher. Because of the shortage of sulphur and sulphuric acid, supplies of manufactured phosphates may be as much as 5 or 6 percent smaller than in the 1950-51 season.

Nitrogen (N): During the 1950-51 cropping season approximately 1,285,000 tons of Nitrogen (N) were available for use by farmers. The supply for 1951-52 season is expected to be perhaps 7 percent higher, or about 1,375,000 tons, assuming net imports to be slightly above last year's levels. An increase in industrial demand, or a change in military requirements could reduce this margin of increase.

Phosphates ($P_2O_5$): Some curtailment is expected in the production of superphosphate because of the continued shortage of sulphur and sulphuric acid. Because of this situation, and assuming normal export-import relationships, the 1951-52 supply of $P_2O_5$ is estimated to approximate 2,100,000 tons or about 6 percent less than the quantity available in the 1950-51 cropping season.

The over-all demand for sulphur increased greatly during 1951. Some new facilities are now in operation to recover sulphur from various sources and others are being installed. However, these new facilities will not meet increased needs for sulphur for agricultural purposes.

Methods of conservation of crude sulphur by substitution of other sulphur-bearing materials have been recommended, as well as the use of substitutes where applicable.

Potash ($K_2O$): A record of 1,445,000 tons of $K_2O$ were available for use in the 1950-51 cropping season. Although a program for a substantial expansion in output is under way in the Carlsbad, New Mexico area the additional supplies which are expected from these new facilities will not greatly affect the total tonnage available by mid-summer 1952. For the present, it seems conservative to estimate that a supply of about 1,515,000 tons may be available for the year 1951-52. This is an increase of about 5 percent compared with a year earlier.

More information is needed on crop responses to each nutrient at different levels of the other nutrients. However, present estimates of desirable ratios of fertilizer nutrients as developed by Joint Land-Grant College - U.S.D.A. State Productive Capacity Committees reflect the need for more nitrogen in relation to phosphate and potash. For corn these estimates generally indicate that it would be more profitable to use a pound of nitrogen (N) for each pound of $P_2O_5$ and each 3/4 pound of $K_2O$ instead of the present estimated rate of 1 pound of N for each 1.7 pound of $P_2O_5$ and 1.1 pound of $K_2O$. Corn now receives a little more than 1/4 of the nitrogen (N) applied for all crops, but estimates of the most profitable distribution indicate that by 1955 this percentage probably would be raised to about one-third.

## Building Materials, Supplies and Containers

Prices paid by farmers for building and fencing materials were 5 percent higher in December 1951 than a year earlier. However, most of this increase took place between December 1950 and March 1951.

Prices of farm building materials were at their peak last summer. At that time the materials (other than sand and gravel) used in the construction of a typical poultry house large enough for 200 layers (16'x48') would have cost $802. In 1940 the same bill of materials would have cost slightly less than $300. The comparable figure for last December was $799, only $3 below the record high.

Fencing materials are even higher now than they were last summer. The materials required to build a mile of woven wire fence with two strands of barbed wire would have cost $682 in December 1951 compared with $675 in June 1951 and $295 in 1935-39. A cheaper fence consisting of 4 strands of barbed wire now requires $469 worth of materials in contrast with $193 worth in 1935-39.

The demand for lumber seems to have increased in recent weeks as it became apparent that limitations on the use of certain scarce materials for civilian purposes will not be as restrictive as had been predicted earlier. Although lumber prices may advance some more, many other items will be more plentiful than had been expected and some may be lower in price.

The supply of containers is expected to be adequate to meet farm requirements in 1952. Production of glass containers and paper board has been curtailed because current orders do not warrant capacity output.

## Pesticides

Supplies of pesticides for the 1952 crop year are expected to be approximately equal to anticipated requirements at prices not greatly different from those which prevailed in 1951. Supplies of products containing copper and sulphur may not be sufficient to fill all demands, but alternate materials will be generally available. Manufacturers' prices of most pesticidal materials except 2,4-D and aldrin have remained almost unchanged for the past year. Prices of 2,4-D now average about 15 percent higher and prices of aldrin average about 9 percent lower than a year ago.

Preliminary reports from manufacturers and from PMA State Committees show that the total quantity of pesticides manufactured and sold in 1951 was greater than in 1950. The carry-over of many of the important pesticides at the end of the 1951 crop season was larger than a year earlier. Manufacturers' stocks of some pesticides were larger and inventories held by retailers and farmers also appeared to be larger. Generally the supply situation is better than at this time last year.

Barring unexpected outbreaks of insects or diseases, the total consumption of pesticides in 1952 is expected to be about 9 percent higher than in 1951. Many growers now follow a fairly definite spraying program so that their needs generally can be anticipated. However, unanticipated outbreaks of insects and plant diseases in local areas may increase the demand for some insecticides and fungicides, and require changes in their usual distribution pattern.

Pesticides containing sulphur and copper may be in tight supply. With improved lead supplies there should be sufficient lead arsenate for all expected uses. Dithiocarbamates and other organic fungicides can partially replace sulphur and copper compounds in plant disease control. Parathion, TEPP, or tradename products can be used as alternates for sulphur in the control of mites.

The suggestion that farmers buy their supplies early in the season is still appropriate. Timely application of control materials is important in minimizing losses from insects and diseases, and unless farmers have their supplies of materials on hand they may not be able to obtain the materials of first choice when needed. The desirability of having the pesticides when needed usually more than offsets any gain which might accrue if prices should be reduced late in the season to clean up dealers' stocks.

## Interest, Taxes, and Insurance

Interest payments - Total interest charges on farm-mortgage debt in 1952 are expected to be about 8 percent higher than in 1951 and about 18 percent above 1950. A substantial increase in farm-mortgage debt is the principal cause of the higher interest charges. Further increases in farm-mortgage debt are expected in 1952 but the rate of increase probably will be less than it was in 1951.

The average interest rate on farm-mortgage debt in 1952 is expected to be slightly higher than the estimated 4.7 percent paid in 1951. During the last year there were some increases in farm-mortgage interest rates charged by lenders other than the federally sponsored agencies and the share of the total farm-mortgage debt held by them increased slightly.

Interest charges on farmers' non-real-estate debt (except Commodity Credit Corporation loans) are expected to be about 15 percent more in 1952 than in 1951. It is doubtful if the expansion of credit in 1952 will be as sharp as that which occurred in 1950 and 1951. Notwithstanding any tendency for farmer-borrowing to level off, interest costs would remain up in 1952 because of the large backlog of outstanding debt at the beginning of the year. The non-real-estate loans held by banks and federally sponsored agencies on January 1, 1952 was about 25 percent above a year earlier. The rate of interest on short-term loans is not expected to change appreciably.

Taxes - In most States, farmers may be expected to pay higher taxes in 1952 than in the previous year. All levels of Government--Federal, State, and local--are finding a need for increased revenues, although a few States and localities are presently collecting less taxes than they did a year ago.

Property taxes continue to be the chief source of revenue for most local governments, and also an important source for some State treasuries. Preliminary indications are that farm real estate taxes levied in 1951 and payable largely in 1952 will average 3 or 4 percent higher than in the preceding year. Thus farm real property levies may be expected to set a new all-time record. Taxes on personal property also are expected to be higher.

Taxes that farmers pay, other than those on property, probably will be somewhat higher in 1952. Nearly all State legislatures met in regular or special session in 1951, and the net effect of the large volume of legislation enacted will be to increase farmers' total tax bill. Many bases of taxes, or their rates, were upped, and their full impact will be felt for the first time in 1952.

Special excises on alcoholic beverages, tobacco, and particularly gasoline, were increased by a number of State legislatures. The income tax rates were raised in a number of cases, but it is notable that some States reduced the effective rates. General sales taxes were introduced for the first time in several States, and will be fully reflected in the total amount of taxes farmers will pay in 1952.

The Federal Government increased income tax rates effective late in 1951, raised the gasoline tax one-half cent per gallon, and extended the use of special excises to additional items. On the other hand, a few concessions, of particular application to farmers, were provided taxpayers in the income tax law, and several excises were removed. Still, Federal income tax payments of farmers in 1952 (on income earned the preceding year) are expected to surpass the payments made in 1951.

Although there were a number of tax decreases instituted by Federal, State, and local governments last year, the general pattern of the farm tax bill for 1952 will be upward.

Insurance - The amount of insurance carried by 1,842 farmers' mutual fire insurance companies (348 of which also carry windstorm insurance) increased about 11 percent during 1951, compared with a 10 percent increase in 1950. The insurance in force of such companies amounted to about $28 billion at the end of 1951.

Losses paid by these farm mutuals also increased, primarily because of the increased insurance carried. The loss rate, however, increased only to 15.3 cents per $100 of insurance in 1951, compared with 14.6 cents in 1950.

The total operating expenses of these companies, although higher in 1951, were about the same as in 1950 when a comparison is made on the basis of a fixed amount of insurance. They amounted to about 8.5 cents per $100 of insurance in 1951, compared with 8.4 cents in 1950. The net cost of the insurance to farmers may be considered as the sum of losses paid and operating expenses. On this basis, the "cost" was about 23.8 cents per $100 of insurance in 1951, or about 3 percent more than in 1950.

The reserves of farm mutuals were more than $147 million at the end of 1951, or 6 percent greater than at the end of 1950. However, such reserves amounted to only about 52.3 cents per $100 of insurance at the end of 1951, compared with 54.7 cents at the end of 1950--a 4 percent decrease.

Federal crop insurance was offered in 810 counties in 1951 and was used by an estimated 343,210 farmers. Premiums amounted to about $19.5 million, compared with indemnities paid of about $20 million. In 110 of the 810 counties, 1951 premiums were reduced because of a favorable county-reserve position, based on favorable loss experience of the Federal Crop Insurance Corporation; while in 56 counties premiums were increased because of an unfavorable reserve position and loss experience. Since its adoption in 1948, the plan of multiple-crop insurance has been expanded to additional counties more rapidly than has any of the single-crop plans. Under the multiple-crop contract, protection of the total investment in several crops is available.

Preliminary reports indicate that farmers paid out more than $50 million in hail insurance premiums on growing crops in 1951, or about 20 percent more than they did in 1950. On the other hand, farmers received more than $30 million in loss payments for hail damage to their crops.

U. S. Department of Agriculture
Washington 25, D. C.

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# THE Farm Cost SITUATION

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UNITED STATES DEPARTMENT OF AGRICULTURE

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## GENERAL SITUATION

Cost rates for most commodities used in farm production and also wage rates are likely to increase slightly in 1953 while prices received by farmers for commodities probably will average slightly lower than in 1952. This means that the cost-price squeeze on producers will be intensified in 1953.

Farmers' demands for labor and for goods used in production will continue high in 1953. Demand for agricultural products also will continue high and agricultural output is expected to be near the 1952 record level, if weather conditions are average. Supplies of labor and most production goods are expected to be sufficient to meet requirements. With prices of production items expected to be a little higher, total expenditures for production in 1953 probably

NOV 1 [illegible]

Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39=100)

| Year | Commodities, interest, taxes and wage rates | Commodities only | Feed | Live-stock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 1/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 75 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 77 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 81 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 83 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 121 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 140 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 153 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 162 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 118 | 103 | 100 | 71 | --- | --- | 105 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 119 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 128 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 129 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 131 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 128 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 129 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 132 | 119 | 132 | 146 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 132 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 124 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 106 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 92 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 87 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 94 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 82 |
| 1935 | 98 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 99 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 106 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 100 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 105 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 105 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 122 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 155 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 191 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 203 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 209 | 199 | 200 | 324 | 144 | 200 | 180 | 176 | 215 | 141 | 194 | 352 |
| 1951 | 231 | 220 | 225 | 395 | 150 | 212 | 194 | 189 | 239 | 149 | 197 | 388 |
| Jan. | 223 | 213 | 219 | 381 | --- | 203 | --- | --- | --- | --- | --- | 372 |
| Feb. | 227 | 218 | 222 | 407 | --- | --- | --- | --- | --- | --- | 195 | |
| Mar. | 229 | 221 | 224 | 415 | 150 | 212 | 188 | 182 | 239 | --- | 196 | |
| Apr. | 234 | 223 | 225 | 426 | --- | --- | --- | 183 | --- | 148 | 198 | 396 |
| May | 233 | 221 | 227 | 392 | --- | --- | --- | --- | --- | --- | 197 | --- |
| June | 232 | 220 | 222 | 394 | 150 | --- | 197 | 191 | 241 | --- | --- | --- |
| July | 231 | 219 | 221 | 389 | --- | 213 | --- | --- | --- | --- | --- | 393 |
| Aug. | 231 | 220 | 221 | 392 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 233 | 222 | 223 | 402 | 149 | 213 | 198 | 194 | 239 | 150 | 199 | --- |
| Oct. | 233 | 223 | 227 | 404 | --- | 216 | --- | --- | --- | --- | --- | 393 |
| Nov. | 234 | 223 | 233 | 389 | --- | 218 | --- | --- | --- | --- | --- | --- |
| Dec. | 233 | 222 | 240 | 356 | 152 | 219 | 199 | 195 | 240 | --- | --- | --- |
| 1952 | | | | | | | | | | | | |
| Jan. | 237 | 224 | 242 | 370 | --- | 219 | --- | --- | --- | --- | --- | 412 |
| Feb. | 240 | 227 | 243 | 376 | --- | 224 | --- | --- | --- | --- | 219 | --- |
| Mar. | 239 | 226 | 242 | 372 | 151 | 222 | 201 | 196 | 240 | --- | 220 | --- |
| Apr. | 240 | 226 | 242 | 373 | --- | --- | --- | 195 | --- | 153 | 223 | 421 |
| May | 240 | 227 | 240 | 373 | --- | --- | --- | --- | --- | --- | 227 | --- |
| June | 237 | 220 | 237 | 325 | 151 | 222 | 202 | 202 | 239 | --- | --- | --- |
| July | 236 | 220 | 235 | 324 | --- | 222 | --- | --- | --- | --- | --- | 418 |
| Aug. | 237 | 221 | 240 | 322 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 235 | 219 | 242 | 300 | --- | --- | --- | --- | --- | 154 | 224 | 418 |

1/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices," Bureau of Agricultural Economics, October 30, 1951.

will be slightly above this year. These expenditures have risen in almost every year since 1938 as both prices and the quantity of items used have increased. Expenditures in 1952 were 3 to 4 percent higher than in 1951, and the highest on record.

The outlook in 1953 is for a somewhat smaller supply of labor, but if continued emphasis is given to using labor efficiently and increased efforts devoted to recruitment programs no real shortage of workers should develop. However, farmers may find a problem in replacing some skilled and dependable regular workers. Wage rates in 1953 may be less than 5 percent above the 1952 average. Rates this year are averaging around 7 percent higher than in 1951.

Costs of farm machinery and power in 1953 are expected to be higher than in 1952. Retail prices of farm machinery and equipment probably will be somewhat higher in 1953 than in 1952, and prices of motor fuels and tires also may be higher. The impact of the defense program and work stoppages in plants producing steel and farm machinery have reduced output of farm machinery in 1952, and production in 1952 is expected to be lower than in any year since 1948. However, production during the past several years has been high and, as a result, sufficient power and machinery are expected to be available to maintain agricultural production at a high level in 1953.

Feed costs in September were about 9 percent higher than a year earlier. Corn may average slightly lower in price during the current feeding season but other feed grains and high protein feeds probably will average higher. Hay prices will average higher this winter and early spring. Feed supplies per animal unit for the year beginning October 1952 are about the same as a year ago.

Farmers are paying less this fall than last for alfalfa seed and for 16 out of 22 other important legume and grass seeds, but they are paying considerably more for crested wheatgrass, smooth bromegrass, and timothy. They are also paying a little more for redtop, alsike clover, and red clover. As conditions appear now, farmers are likely to gain by purchasing timothy, redtop, smooth bromegrass and crested wheatgrass seeds this fall, and postponing until needed purchasing of tall fescue, ryegrass and legume seeds, except alsike clover.

Prices farmers pay for fertilizer are now averaging around 3 percent higher than a year ago, and probably will be slightly higher next spring in some areas, particularly in the West and Midwest. Supplies of nitrogen for the 1952-53 season probably will exceed those for the past season by about 11 percent. Supplies of phosphates ($P_2O_5$) and potash ($K_2O$) available for the 1952-53 season probably will exceed those for last season by 10 and 17 percent respectively.

Prices of miscellaneous farm supplies have gone up year by year since 1939, and are now the highest on record. They will average slightly higher in 1953. Aluminum production in 1952 is likely to exceed one million tons for the first time. Copper mill products still are far from plentiful, but the supply picture is brighter than it was a few weeks ago. Containers, cotton bags and bale ties are expected to be adequate. Lumber and other materials used in farm construction are expected to be adequate for 1953 needs and at or near present prices. However, barbed and woven wire fencing is expected to continue scarce through most of 1953.

Current stocks of many pesticides appear to be high. Current indications are that supplies for the 1953 season will be adequate. Prices in 1953 of many important pesticides probably will not differ greatly from those of the 1952 season.

Interest rates on mortgages placed on farm property in 1953 are not expected to change from 1952 levels. Farm mortgage debt has increased, however, and is expected to be higher in 1953. An increase of about 5 percent in farm real estate tax levies and a slightly greater increase in farm personal property taxes is expected in 1953. Insurance rates in 1953 may be slightly lower than in 1952.

No sharp price changes are expected in farm real estate values during 1953. Some further rise could occur during the next 6 months,' but values are likely to show a small downward drift after mid-1953. Gross rents are likely to decline moderately, with share rents dropping a little more than cash rents.

As always, the real effects of changes in cost rates and in prices received for products sold will differ greatly by type and location of farm. As illustrations of the effects of these changes on commercial family-operated hog-beef fattening farms in the central Corn Belt, dairy farms in the Northeast, winter wheat farms in western Kansas and southwestern Nebraska, and cotton farms in the southern Piedmont are discussed in the last section of the report.

## Farm Labor

The farm labor situation in 1953 is not expected to be greatly different than in 1952. The outlook in 1953 is for a somewhat smaller supply of labor and a slight rise in farm wage rates. But, on the whole, the supply of farm labor next year is expected to be sufficient to keep farm production at high levels. But continued emphasis should be given to using labor efficiently and effective recruitment campaigns are conducted.

Wage rates paid farm workers this year are averaging around 7 percent higher than in 1951 (table 1). Prospects are that wage rates in 1953 may rise less than 5 percent above 1952. The extent of the rise among areas will vary according to the extent of net losses of farm workers to industry and the armed forces, and changes in the demand for labor.

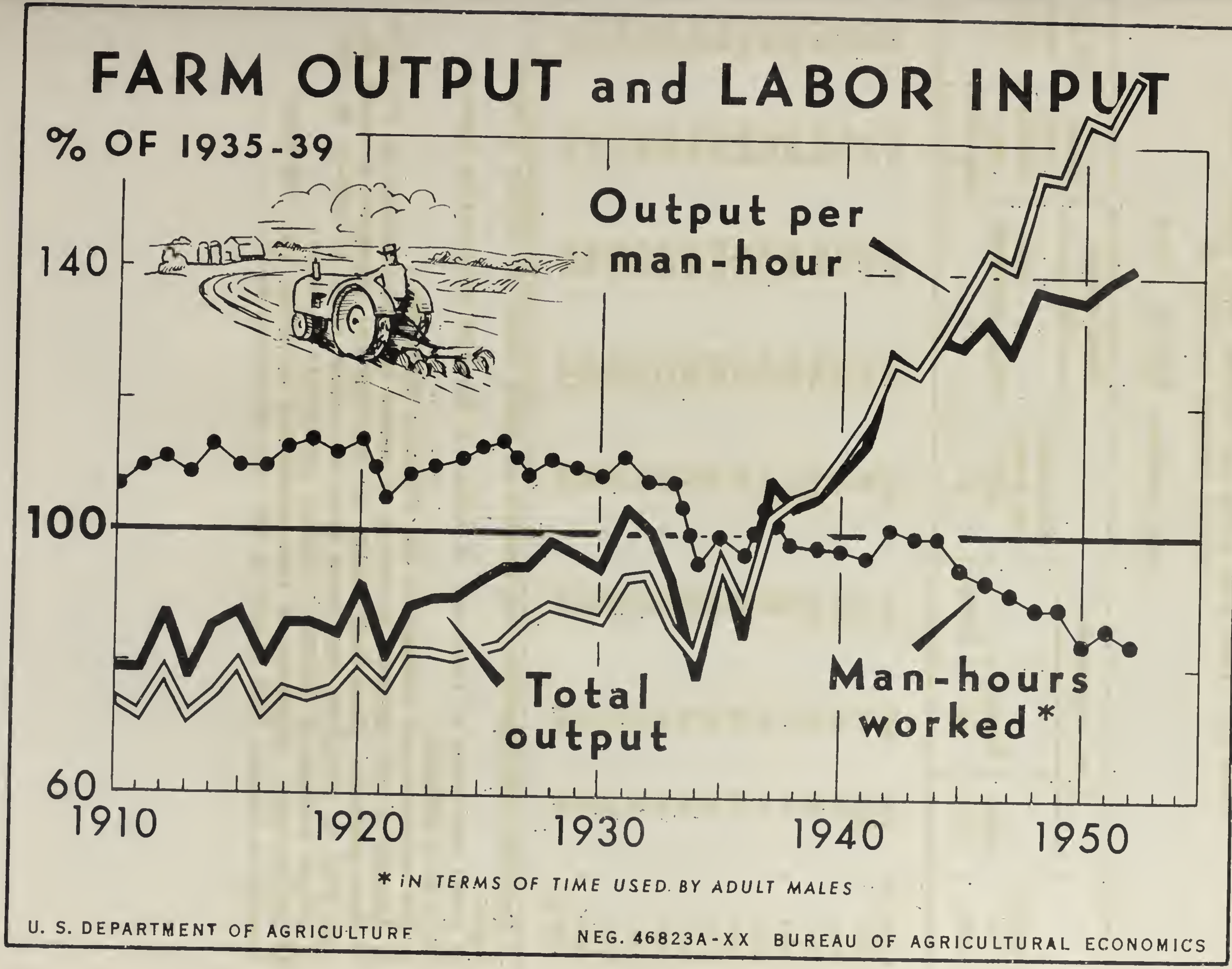
The number of workers employed on farms decreased fairly steadily during the past 15 years. Labor requirements of agriculture also declined substantially during this period because of rapid gains in farm mechanization and other improvements in farming methods (fig. 1). Consequently, new farm output records were set with progressively fewer workers on farms. Output per man-hour and per farm worker in 1952 are the greatest on record.

A continued decrease in the supply of farm labor and the number of farm workers employed is expected in 1953. However, further progress in mechanization and other advances in technology should lower labor requirements and reduce the number of workers needed on farms. Even so, the problem of replacing some skilled and dependable regular workers must be met if high level production is to be maintained.

Although only a nominal increase in the net size of the armed forces is probable in 1953, the rotation of armed services' personnel will create labor problems for some farmers who will lose workers to the Armed Services. They will need to plan for replacements, or make other adjustments in the operation of their farms.

The supply of experienced regular workers next year may be even tighter than at present. Farm workers will continue to shift to nonfarm employment because of higher wages or improved working and living conditions. It may be good business for farmers in need of labor to be on the lookout for potential year-round workers and train them.

Difficulties may be experienced in getting adequate supplies of seasonal workers in some areas next year. More extensive use of custom work and exchanging of labor will help in meeting these difficulties. Also, continued provision of foreign workers would help in areas where supplies of domestic workers are inadequate.



FARM OUTPUT and LABOR INPUT

* IN TERMS OF TIME USED BY ADULT MALES

U. S. DEPARTMENT OF AGRICULTURE NEG. 46823A-XX BUREAU OF AGRICULTURAL ECONOMICS

FIGURE I

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-52

(Index numbers, 1935-39 = 100)

| Period or year | Farm employment | | | Man-hours of farm work 2/ | Farm output 3/ | | Gross farm income per man-hour 4/ | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | | Total | Per man-hour | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 103 | 98 | 110 | 112 | 107 | 107 |
| 1941 | 98 | 97 | 101 | 97 | 114 | 118 | 135 | 125 |
| 1942 | 98 | 97 | 101 | 101 | 128 | 127 | 176 | 163 |
| 1943 | 97 | 97 | 96 | 100 | 125 | 125 | 219 | 217 |
| 1944 | 95 | 97 | 88 | 100 | 130 | 130 | 231 | 263 |
| 1945 | 93 | 96 | 83 | 95 | 129 | 136 | 256 | 297 |
| 1946 | 95 | 98 | 85 | 93 | 133 | 143 | 298 | 320 |
| 1947 | 96 | 98 | 88 | 91 | 128 | 141 | 358 | 346 |
| 1948 | 95 | 96 | 91 | 89 | 138 | 155 | 372 | 365 |
| 1949 | 92 | 93 | 89 | 89 | 137 | 154 | 342 | 354 |
| 1950 | 89 | 90 | 85 | 83 | 136 | 164 | 371 | 352 |
| 1951 | 86 | 87 | 81 | 86 | 139 | 162 | 409 | 388 |
| 1952 6/ | 84 | 85 | 80 | 83 | 143 | 172 | 433 | 417 |

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1/ Includes farm operators and members of their families working without wages.

2/ Total man-hours of farm work in terms of the time required by average adult male workers.

3/ Net calendar-year production for eventual human use.

4/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1952.

5/ Simple average of quarterly indexes seasonally adjusted.

6/ Preliminary. Estimates of farm output and man-hours for 1952 based chiefly on October 1952 report of the Crop Reporting Board.

## Farm Power and Machinery

Costs of farm machinery and power in 1953 are expected to be moderately higher than in 1952. Retail prices of farm machines, equipment and motor fuel in 1952 were higher than for any previous year but the cost of keeping workstock and prices of tires were moderately below the record high of earlier years. Prices of farm machinery rose slightly during 1951 and 1952, and are now about 13 percent above the June 30, 1950 prices. Most of this increase occurred in the last half of 1950. Manufacturers are now faced with increased costs of materials and labor and a moderate increase in prices of farm machinery seems likely for 1953. Prices of motor fuel and tires may be moderately higher in 1953 than in 1952.

Production of farm machinery and equipment in 1952 fell below the record level of last year, and it is expected to total the lowest for any year since 1948. The principal reasons for the decline are the impact of the defense program build-up and work stoppages in plants producing steel and farm machinery.

With farm incomes only moderately lower than in 1952 and a further reduction in the labor force in prospect for 1953, demand for farm machinery should again be strong. Such important machines as tractors, combines, corn pickers and balers have been steadily increasing in number and this trend will probably continue for some years. Sufficient power and machines will be available to maintain agricultural production at a high level in 1953.

Volume of exports of farm machinery in the first half of 1952 was about 12 percent higher than in the same period in 1951 and about the same as the high exports of the first half of 1949. Exports of crawler tractors and machinery repair parts so far this year were greater than in 1951 but exports of wheel tractors were about 10 percent less.

Farmers' purchases of farm machinery have been large in each year for more than a decade, except in 1943 when supplies were severely restricted. Preliminary estimates indicate that on January 1, 1952 there were 4,170,000 tractors of all kinds on farms, 70 percent more than in 1945. Of the 1952 total about 89 percent were the wheel type, including homemade, 4 percent were crawlers, and 7 percent garden tractors. There were but few garden tractors on farms in 1940 or earlier years.

The total volume of power, machinery, and equipment on farms January 1, 1952 was about 85 percent above the average of 1935-39. This includes power from horses and mules. With relatively high purchases in 1952 the amount of machinery and power on farms in 1953 will exceed that of any previous year.

Along with the increase in volume of total power and machinery since the prewar period there has been a large decrease in horse and mule numbers. Horses and mules on farms January 1, 1952 were 60 percent below the 1935-39 average (table 2). The 1951 colt crop was the smallest

Table 2.- Horses and mules and tractors on farms and cost of keeping horses and mules and of using farm tractors, United States, 1935-39 average and 1940-52 1/

(Index numbers 1935-39 = 100)

| Calendar year or period | Tractors on farms, number January 1 | Horses and mules on farms, number all ages January 1 | Colts under 1 year on farms, number January 1 | Horses and mules all ages, value per head January 1 | Feed cost per head 2/ | Prices paid by farmers for: | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | New tractors 3/ | Gasoline | Tires 6.00 x 16 |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 124 | 92 | 101 | 90 | 93 | 96 | 95 | 92 |
| 1941 | 135 | 90 | 98 | 81 | 101 | 101 | 99 | 95 |
| 1942 | 152 | 87 | 85 | 78 | 126 | 102 | 103 | 117 |
| 1943 | 169 | 84 | 69 | 95 | 164 | 99 | 103 | 130 |
| 1944 | 178 | 80 | 62 | 98 | 188 | 111 | 103 | 136 |
| 1945 | 195 | 76 | 54 | 86 | 186 | 113 | 103 | 131 |
| 1946 | 206 | 71 | 42 | 80 | 207 | 126 | 106 | 133 |
| 1947 | 220 | 64 | 35 | 84 | 249 | 142 | 118 | 127 |
| 1948 | 240 | 59 | 31 | 79 | 261 | 158 | 131 | 128 |
| 1949 | 266 | 54 | 28 | 72 | 204 | 174 | 134 | 124 |
| 1950 | 291 | 49 | 23 | 63 | 212 | 175 | 135 | 139 |
| 1951 | 4/317 | 45 | 19 | 56 | 240 | 188 | 136 | 165 |
| 1952 | 4/335 | 40 | 16 | 55 | 5/251 | 6/188 | 6/138 | 6/159 |

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1/ The 1935-39 averages were: Horses and mules all ages, 15,750,000 head; value per head, $97.65; feed cost per head, $44.40; colts under one year of age 744,000 head; tractors, 1,244,000; prices paid by farmers for new tractors, $1,060; gasoline $0.19; and tires, $12.60.

2/ Based on 25 bushels each of oats and corn and 2 tons of baled hay.

3/ Tractor prices are for medium size (20-29 BHP) wheel tractor equipped with rubber tires.

4/ Preliminary estimates.

5/ Average of the first 8 months.

6/ Average prices paid in March and June.

in more than a century and only about 5 percent as large as the average colt crop of World War I. Prices of horses and mules have declined each year since 1943, and the average value per head on January 1, 1952 was only 55 percent of the 1935-39 average. Numbers of motortrucks on farms continue to increase.

## Feed

Feed costs in September generally differed little from what they were 6 months ago but averaged about 9 percent higher than a year ago. This coming winter and spring corn may average a little lower in price but other feed grains may average higher because of the smaller crops produced in 1952. High protein feeds will probably average higher. In September 1952 oil meals cost about one-fourth more than during the same period a year ago. Hay averaged around 15 percent higher. The average value of the ration fed to poultry and to milk cows in milk-selling areas averaged about 7 percent higher than in September 1951 (table 3).

Feed supplies for the year beginning October 1952 total a little smaller than a year ago (table 4). With some reduction in number of grain-consuming livestock on farms feed supplies per animal unit will be about the same as in the 1951-52 season. Because of the increase in the corn crop a larger tonnage of feed grains was produced this year than in 1951 despite a smaller production of oats, barley and sorghum grains. However, carry-over stocks at the beginning of 1952-53 were nearly one-third lower than a year earlier. Supplies of oil seed meal may be only slightly smaller than in 1951. Total disappearance of feed grains, including that for seed, food, industrial purposes, exports and feed, probably will equal 1952 production so that the carry-over of feed grains a year hence may be about the same as this fall.

The number of hogs to be fed in 1952-53 will be smaller, but the number of beef cattle will be larger. Feed grains required to feed the 171 million animal units in 1952-53 and also that for other uses probably can be met by 1952 production. However, any further expansion in grain-consuming livestock in the future will have to be met with larger feed grain production or imports of feed grain unless reserves are reduced still more.

The hay supply for 1952-53 is 4 percent smaller than in 1951-52 though generally of better quality. The number of roughage-consuming livestock is expected to be up about 4 percent. Hay supplies per animal unit will be below average but probably will be adequate in most areas. However, they will be short in much of the South and in other areas where drought reduced hay production.

Supplies of feed grains and hay in the South in relation to the livestock to be fed are much below average. It would require inshipments of 6-7 million tons of feed grains and nearly 4 million tons of hay to bring the supply up to average in the South. Supplies of feed grains in relation to livestock in the North Central Region are about

Table 3.- Average prices of feeds in the United States, September 15, 1952 with comparisons

| Item | Unit | Sept. 15, 1950 | Sept. 15, 1951 | March 15, 1952 | Sept. 15, 1952 |
|---|---|---|---|---|---|
| Prices received by farmers | | | | | |
| Corn | Bushel | $ 1.44 | $ 1.65 | $ 1.65 | $ 1.71 |
| Oats | do. | .73 | .78 | .89 | .84 |
| Barley | do. | 1.14 | 1.17 | 1.36 | 1.43 |
| Sorghum grain | Cwt. | 1.77 | 2.12 | 2.52 | 3.02 |
| Hay, baled | Ton | 20.30 | 21.30 | 25.10 | 25.00 |
| Feed grains and hay, Index number (1935-39=100) | | 204 | 227 | 241 | 246 |
| Prices paid by farmers | | | | | |
| Mixed dairy feed 16% | Cwt. | 3.64 | 4.07 | 4.43 | 4.37 |
| Laying mash | do. | 4.60 | 4.94 | 5.29 | 5.35 |
| Cottonseed meal | do. | 4.35 | 4.40 | 5.06 | 5.33 |
| Soybean meal | do. | 4.44 | 4.77 | 5.37 | 6.08 |
| Linseed meal | do. | 4.34 | 4.42 | 5.01 | 5.43 |
| Meat scrap | do. | 6.75 | 6.29 | 6.56 | 6.73 |
| Bran | do. | 3.08 | 3.58 | 4.02 | 3.77 |
| Middlings | do. | 3.28 | 3.76 | 4.09 | 3.96 |
| Alfalfa hay, baled | Ton | 29.60 | 33.20 | 39.10 | 37.60 |
| Prices paid by farmers for feed, Index number (1935-39=100) | | 213 | 223 | 242 | 242 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | | |
| Fed to poultry | Cwt. | 3.68 | 3.99 | 4.24 | 4.28 |
| Fed to milk cows in milk selling areas | Cwt. | 3.21 | 3.62 | 3.87 | 3.88 |
| Fed to milk cows in cream selling areas | Cwt. | 2.84 | 3.26 | 3.45 | 3.40 |

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1/ Value of the corn, oats, oil meal, millfeed, commercial mixed feed, etc., making up 100 pounds of "grain" ration.

Table 4.- Feed concentrate supply and utilization and livestock fed, United States, 1937 to 1952 1/

| Year beginning October | Supply | | | | Utilization | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stocks: feed grains: beginning of year | Production feed grains | Wheat, rye and by-products feeds fed | Total | Seed, food, industry and exports of feed grains | Concentrates fed to livestock | Stocks of feed grains end of year 2/ | Animal units grain-consuming livestock fed annually | Production feed grain per animal unit | Supply: concentrates per animal unit | Concentrates fed per animal unit |
| | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million units | Tons | Tons | Tons |
| Av. 1937-41 | 16.9 | 99.3 | 19.9 | 136.1 | 12.1 | 104.9 | 19.9 | 153.1 | .65 | .89 | .69 |
| Av. 1942-46 | 14.7 | 117.3 | 29.4 | 161.4 | 14.8 | 133.0 | 13.5 | 177.5 | .66 | .91 | .75 |
| 1947 | 13.8 | 94.1 | 24.7 | 132.6 | 13.6 | 110.4 | 7.8 | 154.0 | .61 | .86 | .72 |
| 1948 | 7.8 | 135.4 | 23.5 | 166.7 | 17.6 | 120.0 | 30.4 | 160.1 | .85 | 1.04 | .75 |
| 1949 | 30.4 | 120.6 | 25.2 | 176.2 | 17.2 | 127.3 | 30.6 | 166.1 | .73 | 1.06 | .77 |
| 1950 | 30.6 | 122.0 | 25.9 | 178.5 | 20.3 | 129.5 | 28.7 | 172.2 | .71 | 1.04 | .75 |
| 1951 | 28.7 | 114.0 | 27.1 | 169.8 | 17.0 | 132.7 | 20.0 | 175.0 | .65 | .97 | .76 |
| 1952 3/ | 20.0 | 118.8 | 26.5 | 165.3 | 16.0 | 129.0 | 20.0 | 171.0 | .69 | .97 | .75 |

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1/ From Feed Statistics, page 2, April 1952, BAE, and Feed Situation, September 1952, Table 2.
2/ Stocks do not necessarily exactly equal supply less feed and other utilization because of a difference in the crop year for different feed grains.
3/ Preliminary.

Table 5.- Returns per $1.00 of feed cost, United States, September 15, 1952, with comparisons 1/

| Item | 1935-39 average | Sept. 15, 1950 | Sept. 15, 1951 | March 15, 1952 | Sept. 15, 1952 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.72 | 1.56 | 1.97 | 1.14 | 1.62 |
| Chickens | 1.84 | 1.47 | 1.41 | 1.31 | 1.36 |
| Milk | 1.92 | 1.89 | 2.03 | 1.94 | 1.98 |
| Butterfat | 1.55 | 1.37 | 1.53 | 1.61 | 1.52 |
| Hogs | 1.50 | 1.80 | 1.48 | 1.24 | 1.36 |
| Beef | 1.39 | 2.35 | 2.60 | 2.21 | 1.88 |
| Sheep | 1.44 | 1.92 | 2.04 | 1.49 | 1.40 |
| | | | (Index numbers 1935-39=100) | | |
| | Percent | Percent | Percent | Percent | Percent |
| Eggs | 100 | 91 | 115 | 66 | 94 |
| Chickens | 100 | 80 | 77 | 71 | 74 |
| Milk | 100 | 98 | 106 | 101 | 103 |
| Butterfat | 100 | 88 | 99 | 104 | 98 |
| Hogs | 100 | 120 | 99 | 83 | 90 |
| Beef | 100 | 169 | 187 | 159 | 135 |
| Sheep | 100 | 133 | 142 | 103 | 97 |

1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of poultry ration per pound of chicken; 7½ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lambs. It was assumed that for each 100 pounds of sheep and lamb produced 20 pounds of wool were produced from the same feed. The quantity of hay for milk cows, beef cattle and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost 1/4 as much per pound as they would if obtained from hay.

average thus permitting the usual large outshipments to deficit areas. Supplies of corn in the western Corn Belt are substantially larger and of better quality than in 1951. Hay supplies in relation to livestock are below the postwar average in the West North Central Region and in the West but are above average in the East North Central Region.

In September returns from feed fed to beef cattle were still 1/3 above average although much lower than a year ago (table 5). Milk was above average. All other livestock enterprises were below average and lower than a year ago. Returns from hogs and eggs have improved in this respect since last March. Returns from butterfat and sheep have declined. Comparable data are not available for returns to the broiler industry. The Maryland State Department of Markets reported for the week of September 24 a price of 31.2 cents per pound for broilers and 5.66 cents per pound for feed. This indicates returns of $1.70 per $1.00 of feed, assuming 3.25 pounds of feed fed per pound of broiler produced. This is higher than either 6 months or a year ago.

## Seeds

Prices farmers are paying currently for alfalfa and clover seeds are lower than those of last spring, but prices of grass seeds, except orchardgrass and common ryegrass, are higher. Retail prices since last spring have declined the most for tall fescue and common ryegrass. Advances have been largest for timothy seed.

Farmers are paying less this fall than last for 19 out of 25 important legume and grass seeds. All winter cover crop seeds, alfalfa, white and Ladino clover, Kentucky bluegrass, and orchardgrass are lower than a year ago. Declines are most marked for tall fescue, sweet and blue lupines, Ladino clover, and improved varieties of alfalfa seed. Compared with last fall retail prices went up most for crested wheatgrass and timothy. Smaller advances occurred with smooth bromegrass, redtop, alsike clover, and red clover.

Compared with the 1946-50 average for the spring (data for the corresponding fall period are not available), retail prices this fall are lower for red, white, and Ladino clover, bluegrass, tall fescue, common ryegrass, and smooth bromegrass. On the other hand, prices are above average for alfalfa, alsike clover, timothy, redtop, and crested wheatgrass. The current retail price of orchardgrass is about average.

Current supplies (1952 production plus carry-over) of clovers, except Ladino and crimson (considered a winter cover crop), and the grasses, except the ryegrasses (winter cover crops), are smaller than a year ago. But supplies of Ladino clover, fescues, bentgrass, and winter cover crop seeds are larger. Based on supplies and current price trends, it would appear that prices next spring of alsike clover, timothy, redtop, orchardgrass, smooth bromegrass, and crested wheatgrass seed would be higher than in the spring of 1952, while prices of alfalfa, Ladino clover, white clover, tall fescue and common ryegrass would be lower. Little change from the spring of 1952 is indicated in next spring's prices of red clover, sweetclover, and Kentucky bluegrass seed.

As general conditions appear now, farmers probably will benefit by purchasing timothy, redtop, smooth bromegrass and crested wheatgrass seeds this fall, and postponing until spring the purchases of tall fescue, ryegrass and all legume seeds except alsike clover.

## Fertilizer

In the spring of 1952, prices paid by farmers for fertilizer averaged around 3 percent higher than in the same period a year earlier. The Office of Price Stabilization recently granted permission to raise prices to include freight rate increases on fertilizer. As a result, prices paid by farmers for fertilizer in 1953 could be increased 3 to 4 percent. Such an increase probably will occur in the West and Midwest, but fertilizer prices in other areas, particularly the Southeast, probably will change little from present levels.

If domestic production of fertilizer continues as expected and usual import-export balances prevail, the aggregate supply of the three primary plant nutrients available for the 1952-53 season probably will exceed the record amount available for use in 1951-52 by around 12 percent.

Nitrogen (N): The supply of nitrogen (N) available for 1952-53 is presently estimated at 1,585 thousand tons. This estimate is based on current information as to when a number of new synthetic ammonia plants are expected to be completed, allows for some increased production at by-product plants, and assumes about the same import-export balance as in 1951-52. This represents an increase of slightly more than 11 percent above the reported 1951-52 supply of 1,425 thousand tons.

It is estimated that the supply of solid nitrogen materials (dry nitrogen) for 1952-53 represents approximately 62 percent of the total supply, and that solutions and liquid materials (wet nitrogen) 38 percent. For the previous year these percentages were approximately 65 and 35.

Phosphates ($P_2O_5$): Producers of superphosphates and related phosphatic fertilizer materials were able to overcome some of their sulphur and sulphuric acid problems during the 12 months ending June 30, 1952, with the result that production was larger than expected. Assuming some continued improvement and the availability of new sources of sulphuric acid, the supply of phosphates for 1952-53 is presently forecast at 2,465 thousand tons of available phosphoric oxide ($P_2O_5$). An additional 300 to 350 thousand tons of total phosphoric oxide can be expected in the form of ground phosphate rock and other materials.

The estimated supply of available phosphoric oxide for the 1952-53 season is about 10 percent above the 2,235 thousand tons which were put into domestic trade channels in 1951-52.

Potash ($K_2O$): The 1952-53 supply of potash for fertilizer purposes will reflect production by new facilities plus increases by older operating units. Some increase in imports may occur. Exports also are expected to show some increase. Taking these factors into account, it is estimated that the 1952-53 supply will be around 1,850 thousand tons of potash. This amount is about 17 percent above the reported 1951-52 supply of 1,585 thousand tons.

## Building Materials, Supplies and Containers

Prices of building materials have been generally stable for nearly 2 years. The present level is 2 percent below the record high reached in the spring of 1951. It still costs about $800 to buy the materials needed to build a typical poultry house large enough for 200 layers. In 1940 the cost of these same materials was only $300.

Although prices of building materials have increased slightly since June, they probably will not be much higher in 1953 than they are at present and may even be lower. There are some indications that the demand for building materials may decline slightly from the present high level.

Prices of fencing materials are expected to be about 5 percent higher in 1953 than they have been for the last year and a half. Wholesale prices of steel mill products increased about that much a few weeks ago and this increase is expected to be reflected in the prices paid by farmers for fencing materials. In June it took about $670 worth of materials to build a mile of fence consisting of 32-inch woven wire, two strands of 4-point barbed wire and alternate steel and wood posts one rod apart. The same materials that sold for less than $300 in 1935-39 probably will cost about $700 next spring.

Prices of farm supplies averaged 6 percent higher in June than a year earlier. An 18 percent advance in prices of baler and binder twine was an important contributing factor.

Prices of containers are about 5 percent lower than they were last year but they are still about 20 percent higher than they were in 1950.

No serious shortages of building materials, supplies or containers are expected in 1953.

## Pesticides

Retail prices of some important pesticides are lower than a year ago, while others are mostly unchanged. Prices in 1953, however, for most finished pesticidal preparations and mixtures are not expected to differ greatly from those in 1952.

The problems of distributing an adequate supply of finished pesticidal preparations and mixtures to control pests of particular crops or for other specialized uses have become highly complicated. It is no longer possible to manufacture and to distribute all the pesticides needed by farmers within a few weeks before they are used. Plans should be made as early as possible, therefore, to purchase sufficient quantities of pesticides to meet minimum needs. Manufacturers and distributors are dependent upon farmers to make known their needs for pesticides so that the demand may be anticipated in advance of the time of actual use.

The rate of production of pesticides during the first half of 1952 was higher than during the same period a year earlier. The prolonged drouth during the past summer in a large part of the country, particularly in the South, reduced the intensity of pest infestations, and the quantity of pesticides used was less than that of last year. Consequently, plentiful stocks of many important pesticides have accumulated and are depressing current production of certain materials. The capacity is ample to produce the pesticides needed, and supplies for the 1953 season will be adequate provided farmers make their needs known early.

## Farm Land Values and Rentals

Prices of farm real estate rose only 1 percent from March 1 to July 1, 1952, the smallest gain for any 4-month's period since the Korean outbreak. Gains in two-thirds of the States were limited to 3 percent or less, although 16 States showed small declines or no change. The national index of farm real estate values as of July 1, 1952 was 213 (1912-14 = 100), 5 percent above a year earlier and 24 percent above the pre-Korean level (table 6).

General over-all stability in prices of farm products during the first half of 1952, together with some slackening in inflationary pressures in the nonagricultural segment of the economy are largely responsible for slowing the rise in farm land prices. Rising farm production costs and some concern as to the future trend of farm income also have served to reduce the demand at current prices and slow down farm real estate activity. Also, the number of farms on the market continues at a low level.

Although many of the forces responsible for the sharp rise in farm land prices during the first year following the Korean outbreak are no longer operating, values are expected to show some further gain during the last half of 1952, and perhaps through the first few months of 1953. But the increase is likely to be less than 5 percent above the July, 1952

Table 6.- Farm Real Estate: Index numbers of average value per acre and percentage change 1/

| Geographic division | Index numbers (1912-14 = 100) | | | | Change during year ending | | Change during 4 months ending | |
|---|---|---|---|---|---|---|---|---|
| | 1950 | 1951 | 1952 | | July 1951 | July 1952 | July 1951 | July 1952 |
| | | | March | July | Percent | Percent | Percent | Percent |
| New England | 158 | 163 | 169 | 173 | 4 | 4 | 2 | 2 |
| Middle Atlantic | 157 | 172 | 190 | 188 | 13 | 4 | 5 | -1 |
| E. North Central | 166 | 194 | 211 | 215 | 19 | 8 | 3 | 2 |
| W. North Central | 141 | 163 | 178 | 178 | 17 | 5 | 4 | 0 |
| South Atlantic | 228 | 255 | 284 | 290 | 18 | 8 | 5 | 2 |
| E. South Central | 264 | 298 | 327 | 331 | 17 | 5 | 5 | 1 |
| W. South Central | 191 | 235 | 253 | 255 | 20 | 9 | 4 | 1 |
| Mountain | 156 | 176 | 188 | 194 | 19 | 3 | 7 | 3 |
| Pacific | 180 | 199 | 213 | 213 | 15 | 1 | 6 | 0 |
| United States | 169 | 193 | 211 | 213 | 17 | 5 | 5 | 1 |

1/ All farm land with improvements as of March except as indicated.

level. However, with net farm income in 1953 expected to be somewhat lower than in 1952, some weakness could develop by mid-year which would reduce values moderately below present levels by early 1954.

Total rents paid in 1952 probably will reach a new record, largely because of a 5-percent rise in cash rental rates for farms and for hay and pasture on share-rented farms. The value of the crop-share rents is expected to be about 2 percent higher than in 1951, but rents from farms rented on a livestock-share basis may be down slightly. Preliminary estimates place total gross rents for 1952 at $3,379 million, up 2 percent from 1951. Landlord's expenses will also be higher, however, especially those for taxes and building maintenance, so net rents will be about the same as in 1951. With farm real estate values above a year ago, the rate of return on the investment when valued at current prices will be slightly below 1951.

No substantial change in rental rates is expected during 1953 because rental shares change slowly and cash rents are slow to respond to moderate changes in farm income.

## Interest, Taxes, and Insurance

Interest payments - Total interest charges on farm-mortgage debt in 1952 were about 8 percent above 1951, and it is expected that interest charges in 1953 may be around 7 percent higher than in 1952.

Some firming of interest rates on new mortgages has been in evidence since early 1951. The average interest rate on outstanding farm-mortgage debt is now 4.7 percent. However, the chief cause of the rise in total interest charges is the increase in volume of farm-mortgage debt.

There was no substantial change in the distribution of farm-mortgage debt by lender in 1952. From about 1940 through 1951, there was a tendency for lenders other than the federally sponsored agencies to increase their shares of the total farm-mortgage debt.

Interest charges on non-real-estate debt of farmers, excluding loans made or guaranteed by the Commodity Credit Corporation, are believed to be at a record level in 1952. The amount of interest to be paid during 1952 on such debt is 10-15 percent greater than during 1951 and will probably exceed a half billion dollars.

The main cause of the increased cost of interest on non-real-estate debts is the expansion in the use of this type of credit. The total outstanding non-real-estate debt on July 1, 1952 is estimated at 8.3 billion dollars; a year earlier it was estimated at 7.4 billion dollars. The non-real-estate debt is now increasing at a slower rate than during the year immediately following the Korean outbreak.

Some further rise in the cost of non-real-estate farm credit probably will occur in 1953. It is doubtful, however, that it will be as large as during 1952.

On the basis of amounts owed to banks and federally sponsored lenders, the greatest increase in non-real-estate credit costs was in the Mountain and West North Central regions. In those regions, the debt increased about 19 percent between July 1951 and July 1952. The smallest increase--10 percent--occurred in the West South Central region. In no States were there decreases in non-real-estate debt during that year.

Farm taxes - Farmers in most States paid more taxes in 1952 than in the preceding year, and they probably will pay more in 1953. An increase of about 5 percent in farm real estate levies and a slightly greater increase in farm personal property taxes is expected in 1953. Income, motor vehicle, retail sales, and other taxes paid by farmers probably will be as high as or higher than they are this year.

Federal income tax rates that were raised in the 1951 Revenue Act became fully effective in 1952 and are assumed to remain in force next year. With taxable income slightly lower in 1953, income taxes paid by farmers to the Federal Government will not change greatly. A few States lowered their effective income tax rates in 1952.

Retail sales tax laws were changed very little by the 18 State legislatures that met in 1952. A few legislatures lowered gasoline taxes but more raised them, and amounts farmers pay may be expected to increase.

Since the general trend of Federal, State, and local Government expenditures appear to be upward, it is likely farmers' total tax bill will increase.

Insurance - Fire and windstorm insurance assessments paid by farmers to farm mutual companies probably will be higher in 1953 than in either 1952 or 1951. If farm property valuations continue to increase, further increases in insurance costs are expected in 1953. The total amount of insurance carried by such companies has increased steadily in recent years. The increased assessments of mutual companies paid by farmers have been due primarily to increases in the amounts of insurance carried, rather than to substantial increases in rates per $100 of insurance. Assessment rates averaged about 26.7 cents per $100 in 1951 and may be as low as 26 cents in 1952 if losses are not excessive. As the insurance in force increases assessment rates have tended to decline. Rates in 1953 may be slightly lower than in 1952.

In recent years the safety funds of farm mutual fire insurance companies have increased at a faster rate than has the insurance in force. This has tended to increase the stability of assessment rates and decrease the probability and amount of an extra assessment levy.

Federal crop insurance was offered in 1952 in 874 counties, an increase of 64 counties over 1951. Total premiums were approximately 11 percent more than in 1951, but multiple crop insurance increased by 40 percent. Severe losses due to extensive drought conditions which prevailed in many southern and some northern Great Plains States resulted in indemnities being paid to farmers in these areas which exceeded premiums. In other sections of the country due to favorable crop conditions indemnities paid out will be substantially less than premiums.

Farmers paid about 20 percent more premiums in 1952 than in 1951 for hail insurance on growing crops. About 25 percent more insurance was carried than in any previous year. Losses were about average.

## Costs and Returns on Selected Types of Farms

The information presented here illustrates changes in costs and returns on four important types of farms in widely separated areas, and is intended to show how returns to farmers in different localities and operating different types of farms are affected in varying degrees by changes in prices and production costs. The information does not necessarily represent changes on farms generally throughout the country or farms in a particular area. The projections for 1953 for the four types of farms assume that prices received and production expenditures made by farmers will develop about as indicated in earlier sections of this report.

Hog-beef fattening farms, Corn Belt - Production costs on hog-beef fattening farms in the Corn Belt probably will average only slightly higher in 1952 than in 1951. Higher prices for machinery and supplies, higher wage rates for hired labor and higher taxes will be offset largely by lower prices paid for feeder cattle. Volume of production on these farms in 1952 probably will be about 14 percent higher than a year earlier, but lower prices received for cattle and hogs will hold down gross income to about 3 percent above 1951. Net farm income also will average about 3 percent above 1951 (figs. 2 and 3).

These farms average slightly over 200 acres with two-thirds of the land in crops. Corn is the most important crop grown. About 75 to 80 percent of the income is from the sales of hogs and fat cattle. Most of the cattle are raised on the farms but a few are purchased each year. Total investment in 1952 was about $70,000 at current prices. These farms are highly mechanized with relatively high returns to labor and management.

In 1952 the acreage of corn harvested per farm will be about the same as in 1951, but the yield will be about 63 bushels compared with 52 in 1951. Hog production in 1952 will be 10 to 12 percent lower than in 1951.

If cost rates and prices received in 1953 develop about as indicated in earlier sections of this report, and average growing conditions prevail, costs on these farms in 1953 probably will average about 4 percent above 1952, while gross income probably will average about 8 percent below. Consequently, net farm income would average about 10 or 12 percent below 1952. The purchasing power of the returns to operator and family for labor and management would be lower than any year since 1941.

Northeast dairy farms - The average commercial family-operated dairy farm in the central Northeast specialized dairy area has about 22 cows and 14 head of other cattle, plus a farm flock of about 95 chickens. Sales of fluid milk account for about 75 percent of cash receipts and purchases of grain account for about 35 percent of total expenditures on these farms.

Production costs on these farms in 1952 are running about 8 percent higher than in 1951. Prices paid for the dairy ration in the first nine months of 1952 averaged nearly 14 percent higher than in the corresponding months of 1951.

The cost of dairy herd replacements is higher now than a year ago despite a reduction in prices received for cows sold for beef. The embargo on imports of cattle from Canada, imposed because of the recent outbreak of hoof and mouth disease in that country, is partly responsible for the increase in cost of replacements.

Some further increases in costs are expected in 1953. Although the cost of concentrate feed is not expected to change materially, moderate increases are expected in wage rates, taxes, and in prices paid for machinery, supplies and fencing materials.

Net farm income on these farms is expected to be about 9 percent lower in 1952 than in 1951 (fig. 4). Returns to the operator and his family for labor and management will be lower and the purchasing power of these returns will be well below the 1945-49 average.

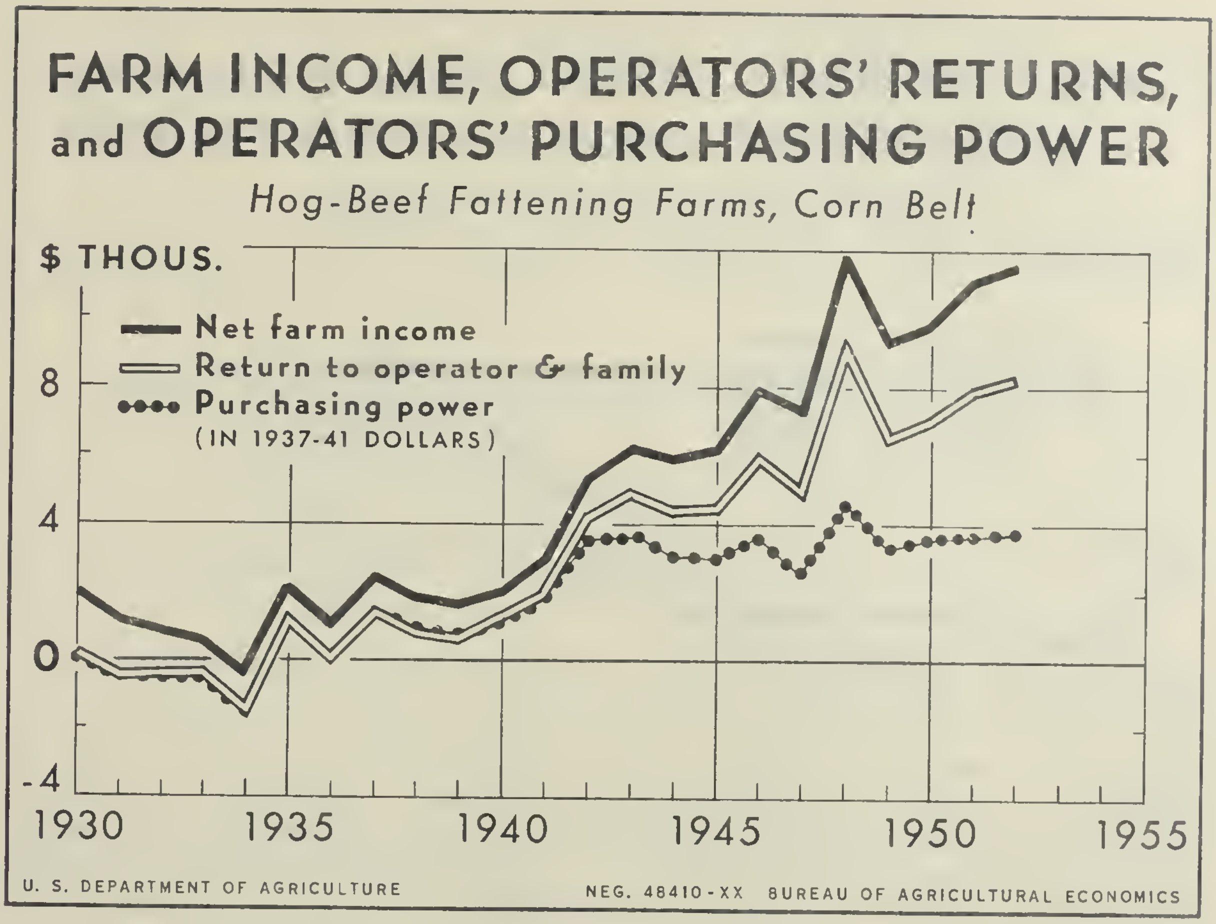


FIGURE 2

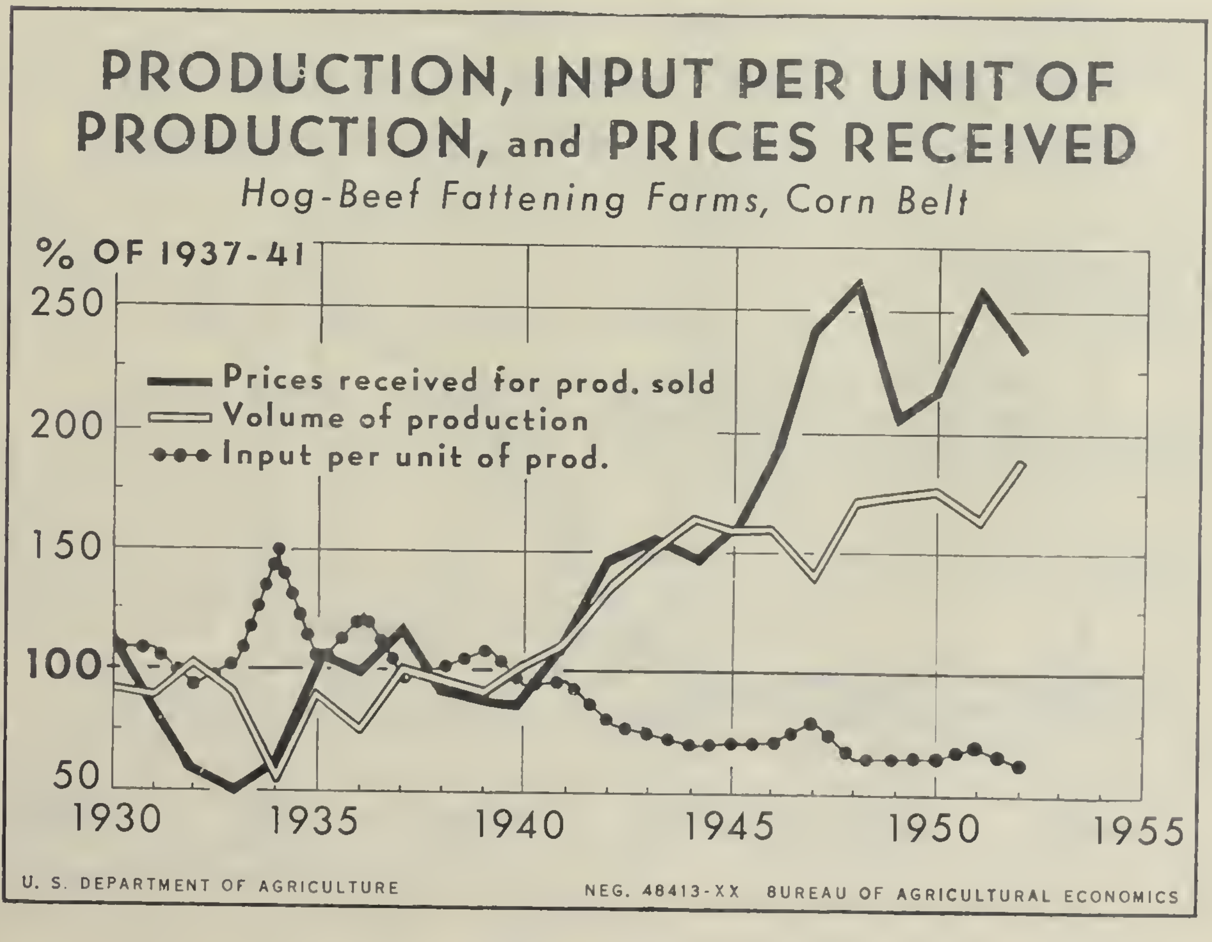


FIGURE 3

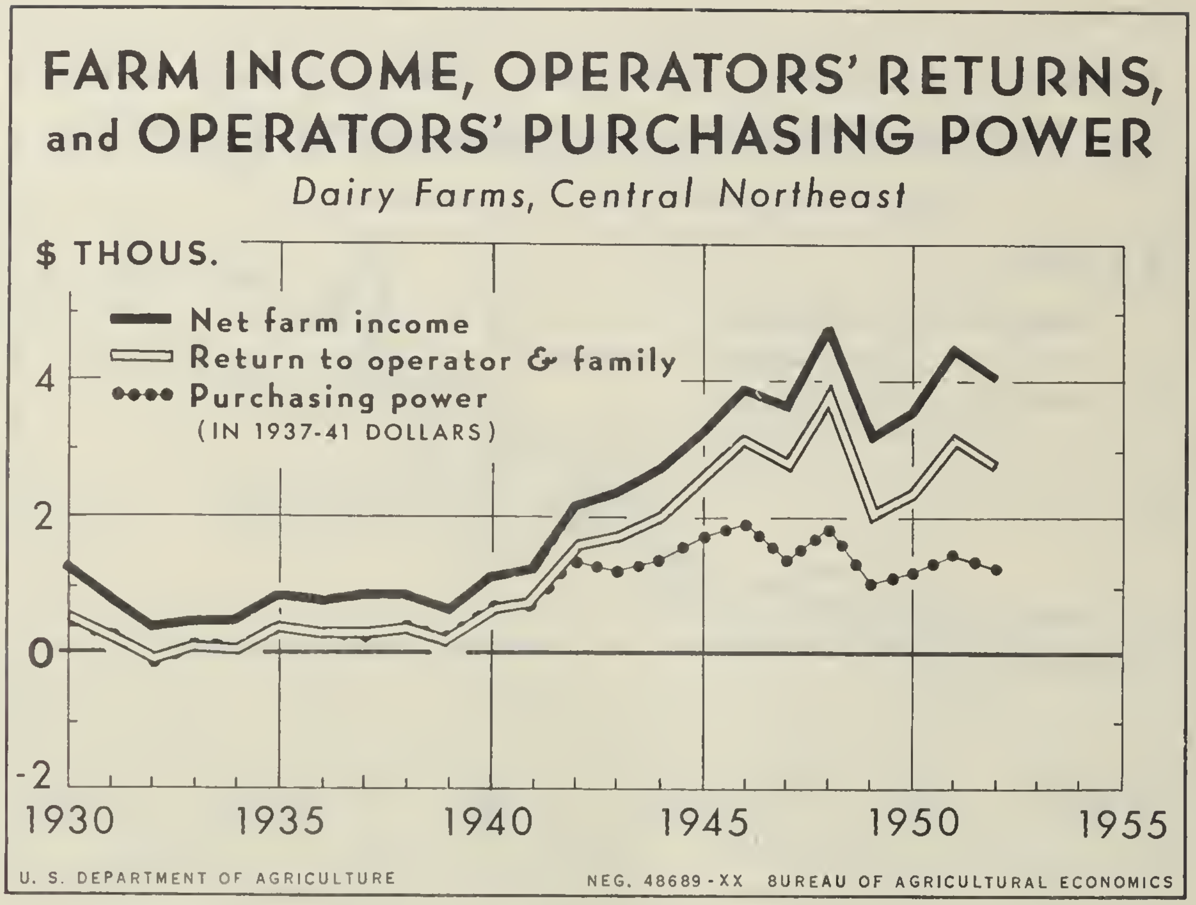


Figure 4

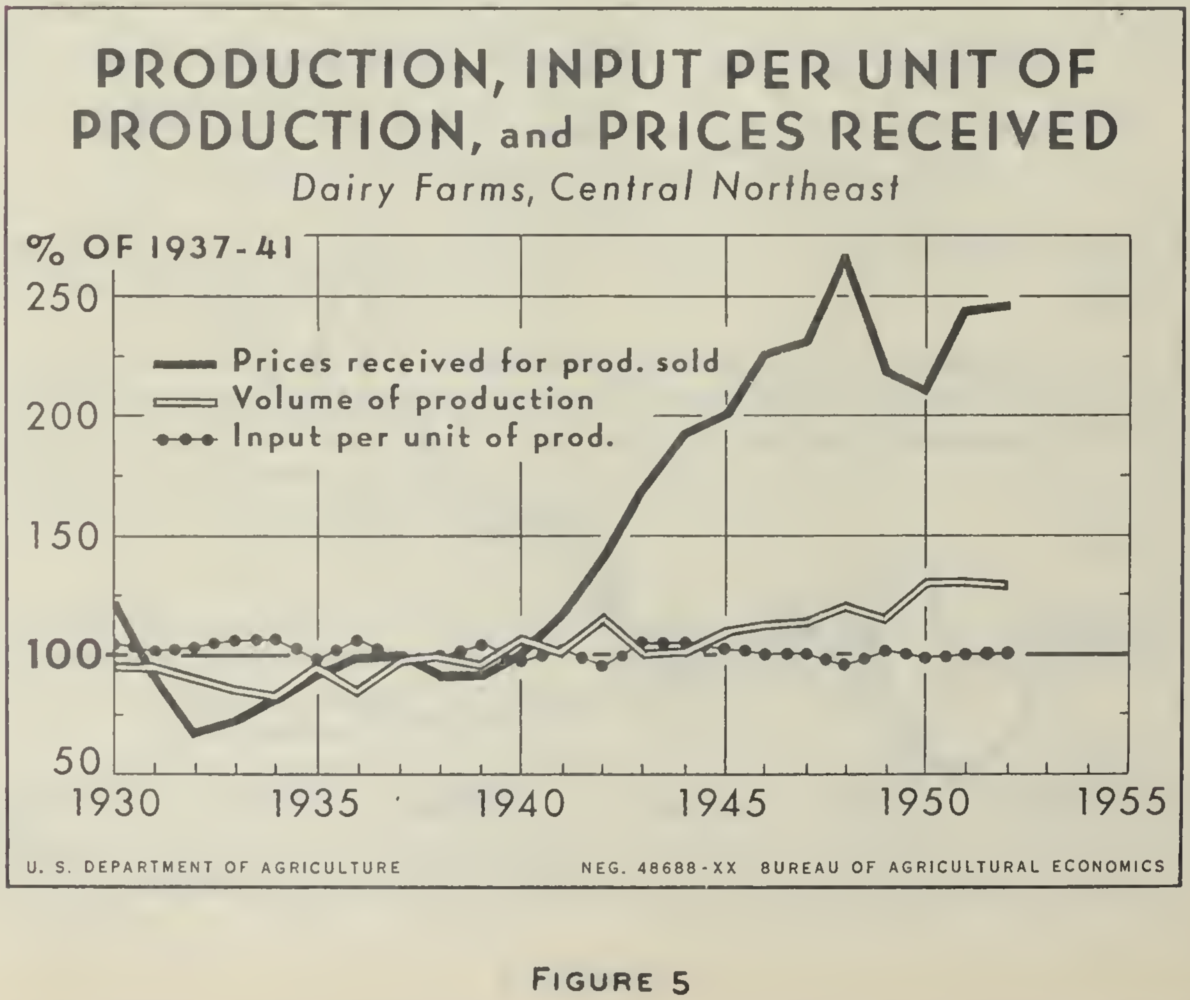


FIGURE 5

The decline in expected earnings is largely the result of higher costs. Volume of production is down slightly from 1951 mainly because of a smaller hay crop and input per unit of production is up slightly (fig. 5).

If cost rates and prices received in 1953 develop about as indicated in earlier sections of this report and average growing conditions prevail, net farm income on these farms in 1953 will be about 5 percent lower than in 1952.

Piedmont cotton farms - Southern Piedmont cotton farms are located in the Piedmont area of South Carolina and Georgia. These farms have 55 acres of cropland of which 15 acres are in cotton. About one-third of the cotton is raised by croppers. Mule power is used on nearly half the farms although mechanization is proceeding rapidly. Total investment amounted to $13,000 in 1951 and two-thirds of gross cash receipts came from cotton and cottonseed.

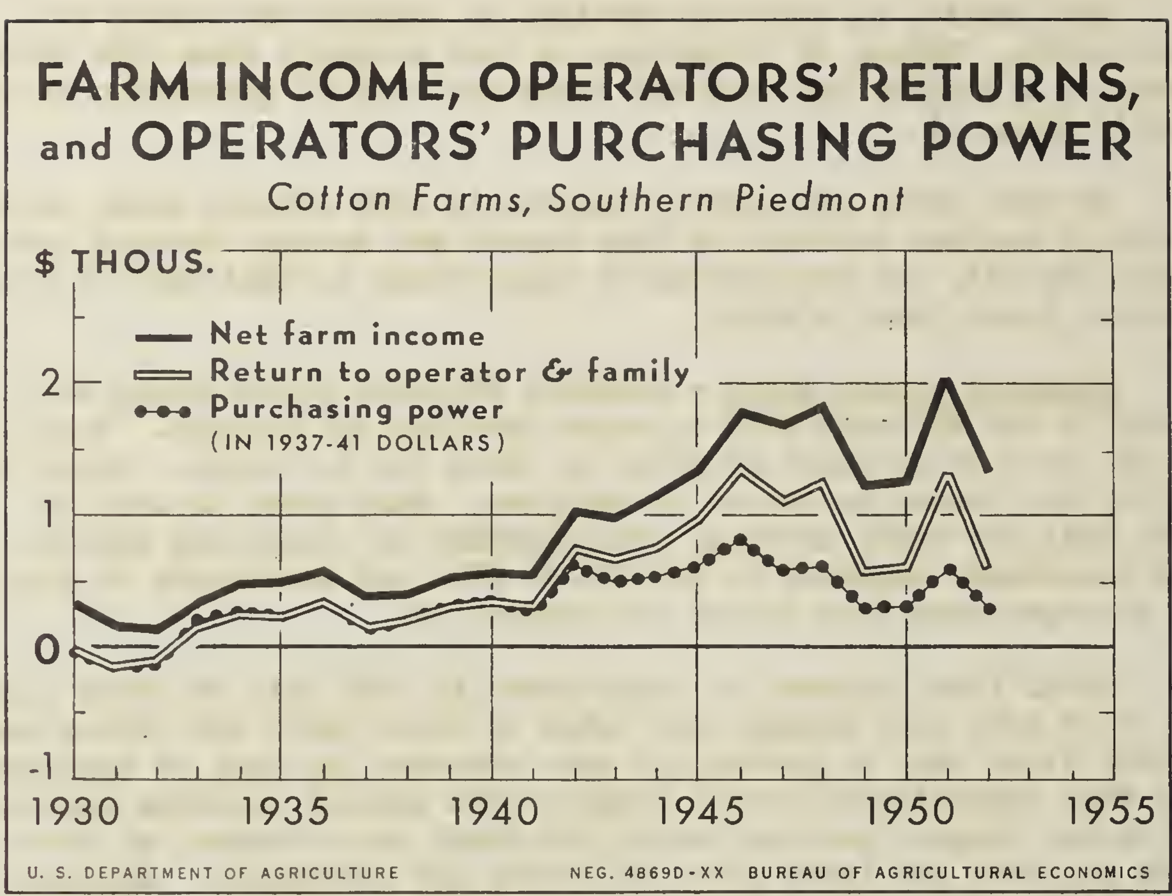
Total farm expenses on these farms in 1952 will be about 6 percent below 1951 even though wage rates of hired labor and prices paid for most items used in production have remained the same or increased. Lower farm expenditures result largely from smaller payments made in kind to the cropper and his family for their labor because of lower yields per acre and lower price of cotton and cottonseed. Expenses for picking cotton and ginning also are smaller. However, total cost per unit of production in 1952 probably will be 6 percent higher than in 1951. This increase is due mostly to lower yield per acre in 1952.

Net farm income and return to operators and their families for labor and management in 1952 will be nearly $700 below 1951, which was a record high year for cotton farms in this area (fig. 6).

In addition to lower yields of cotton lower prices received for products sold also contribute to the expected reduction in income in 1952 (fig. 7). During the first 9 months of 1952 cotton prices averaged about 5 percent below the 1951 calendar year average. Prices of cottonseed for the same period averaged about 23 percent below last year.

Assuming average yields in 1953, total cost per unit of production would be only slightly lower than in 1952 despite higher prices paid for many items used in production. However, unit costs are expected to be higher than in 1951 when cotton yields were very good. Assuming normal yields, higher cost rates, and current prices received, net farm income in 1953 would average about $1,500 compared with about $1,350 in 1952 and a little over $2,000 in 1951.

Winter wheat farms, Southern Plains - Returns to operators and families on winter wheat farms in central Kansas are expected to average about $8,400 per farm; or higher than any year in the last two decades, except 1947, partly because of exceptionally high yields and larger wheat acreages harvested in 1952 on these farms (fig. 8). For these same reasons production expenditures in 1952 probably will average about 8 percent above 1951. Higher prices for production goods and

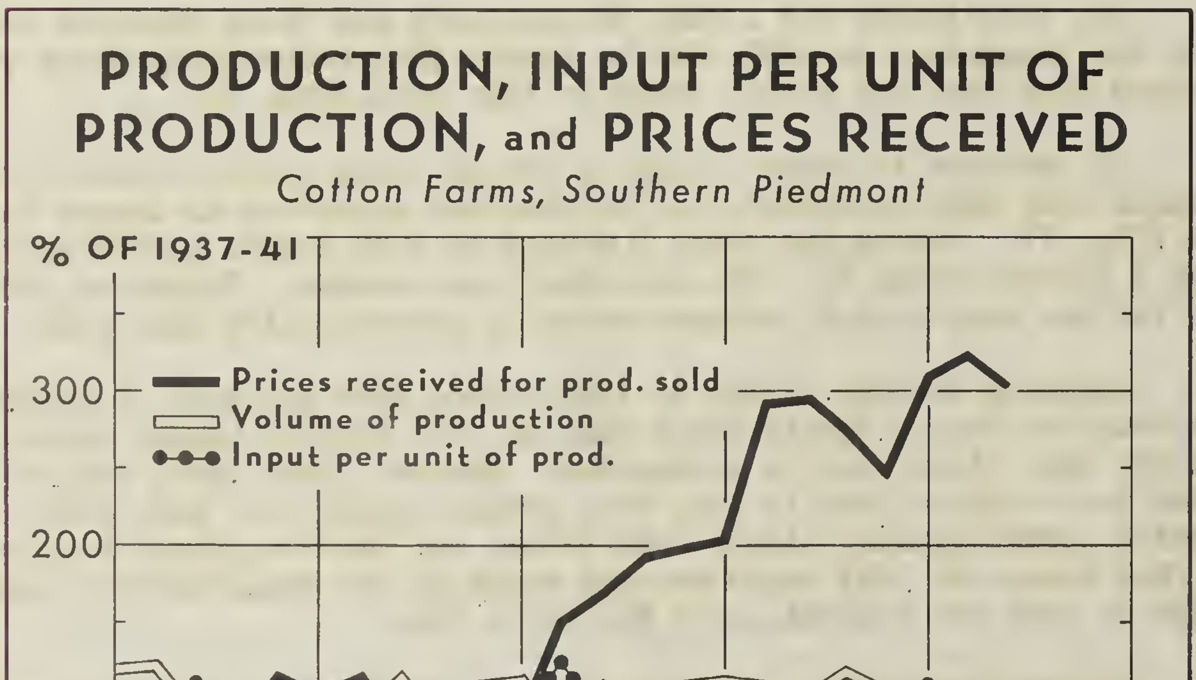


FARM INCOME, OPERATORS' RETURNS, and OPERATORS' PURCHASING POWER

Cotton Farms, Southern Piedmont

U. S. DEPARTMENT OF AGRICULTURE NEG. 48690-XX BUREAU OF AGRICULTURAL ECONOMICS

Figure 6



PRODUCTION, INPUT PER UNIT OF PRODUCTION, and PRICES RECEIVED

Cotton Farms, Southern Piedmont

U. S. DEPARTMENT OF AGRICULTURE NEG. 48687-XX BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 7

higher wage rates for labor account for most of this increase, although tractors and combines were used more and more labor was hired to harvest the large crop. Prices received in 1952 will average above those of 1951 primarily because of higher prices for grain sorghums. Prices received for most other crops and for livestock are expected to be about the same or below those of 1951.

These winter wheat farms average slightly over 600 acres of which about 330 acres were harvested for crops and an additional 135 acres were in summer fallow. About three-fourths of the income on these farms is from the sale of wheat and grain sorghum and nearly one-fourth from the sale of livestock and livestock products. Corn, oats, barley and hay are grown primarily for feed. These farms are highly mechanized. The operator and his family do all the work except for a few days of hired labor during wheat harvest in early summer, and during wheat planting and sorghum harvest in the fall. Total investment value in 1952 was about $60,000.

Costs in 1953 are expected to be only slightly above 1952. Prices paid for production items probably will average about 5 percent above 1952 (fig. 9), but if average yields are obtained, less labor will be hired and total tractor and machine operating costs will be less. However, if yields are at average levels and slightly lower prices are received, incomes will be down. Returns to operator and family for labor and management would then average about $4,700. With higher prices for items used in family living, the purchasing power of these returns would be the lowest since 1940.

Crop yields are highly variable in this area and acreage abandonment of wheat has varied greatly. Wheat yields on a harvested acreage basis, which show less variation than on a planted acreage basis, have varied from 6 to 22 bushels on these farms. Abandonment has varied from 2 to 67 percent. Over the 20-year period, 1930-49, wheat yields averaged 13.6 bushels per acre. Yields have been higher than average in 10 of the 20 years. Except for 1949, yields since 1940 have been above the long-time average.

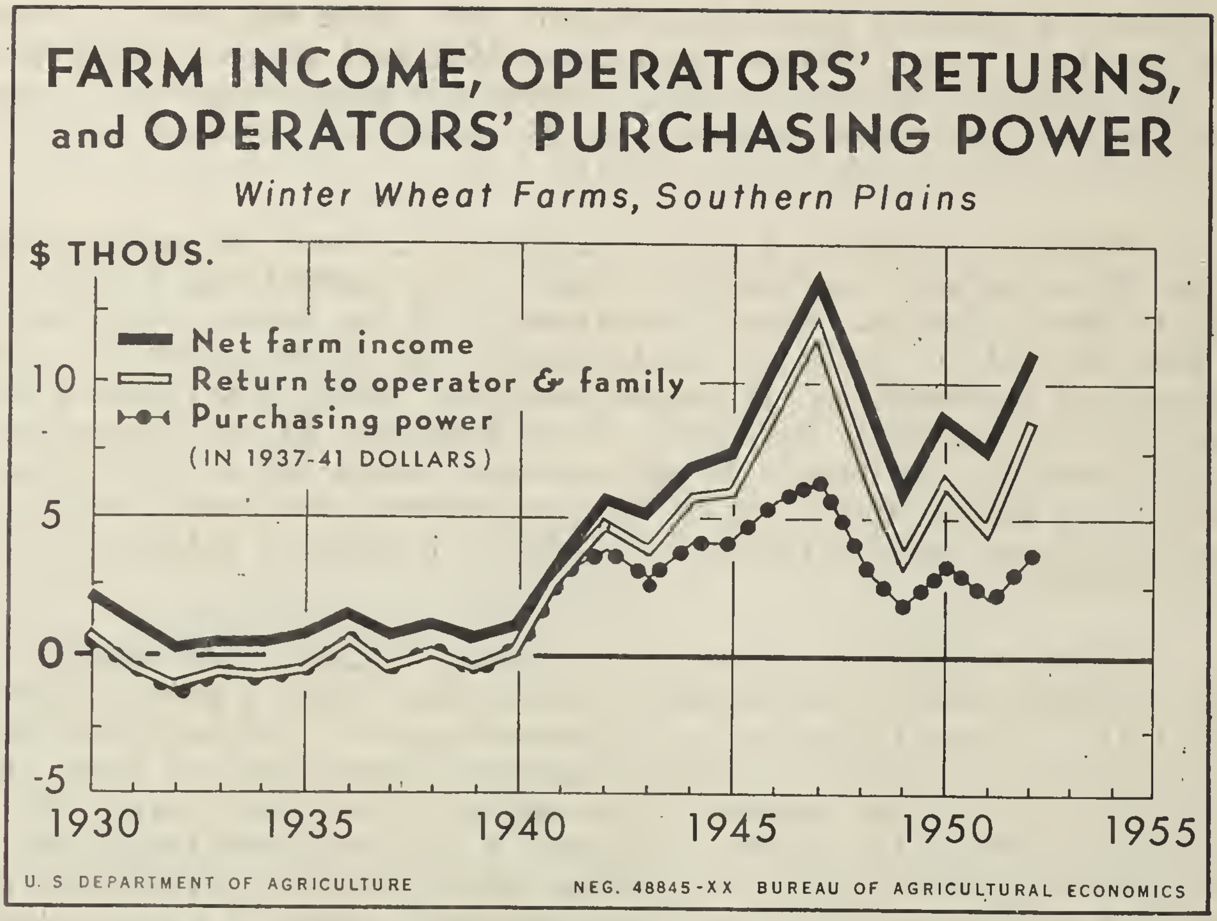


Figure 8

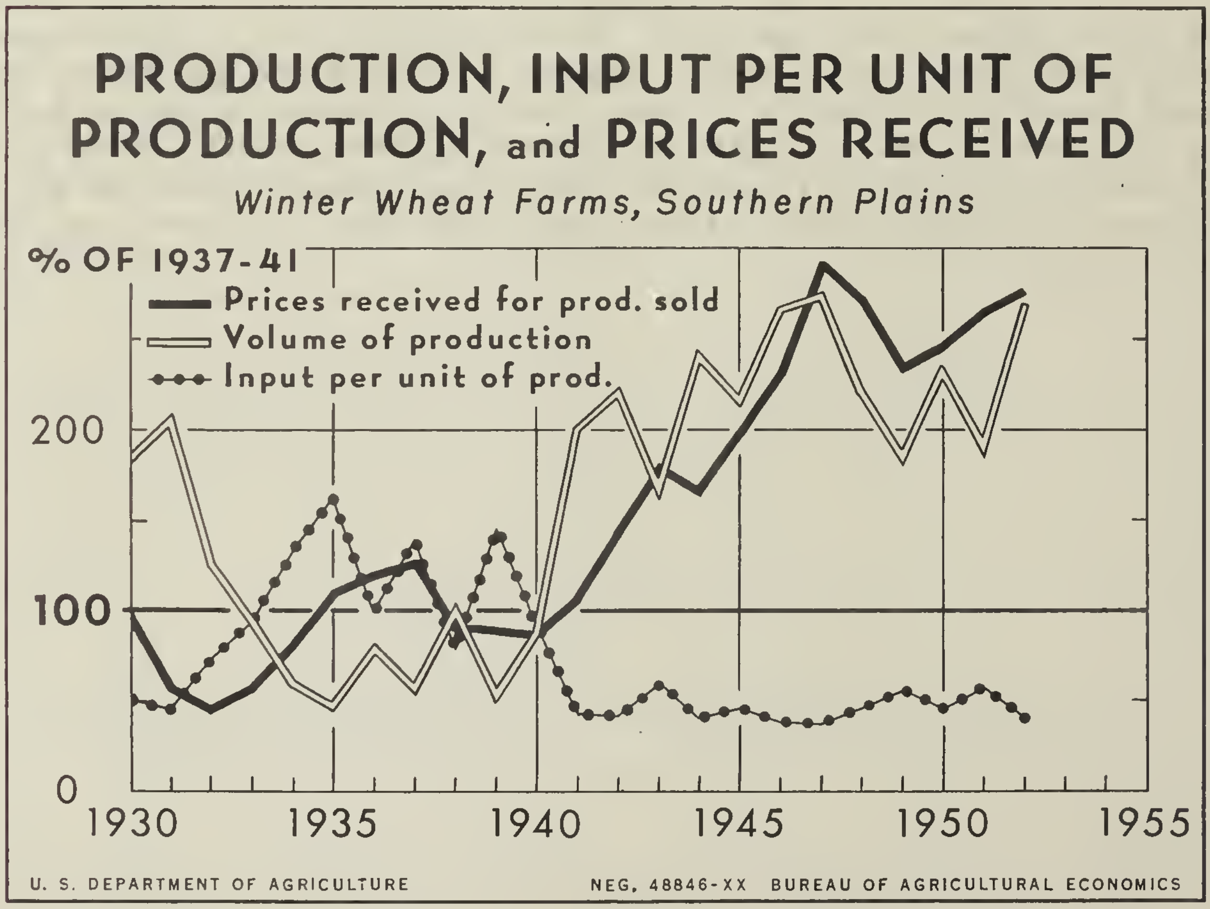


FIGURE 9

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# THE Farm Cost SITUATION

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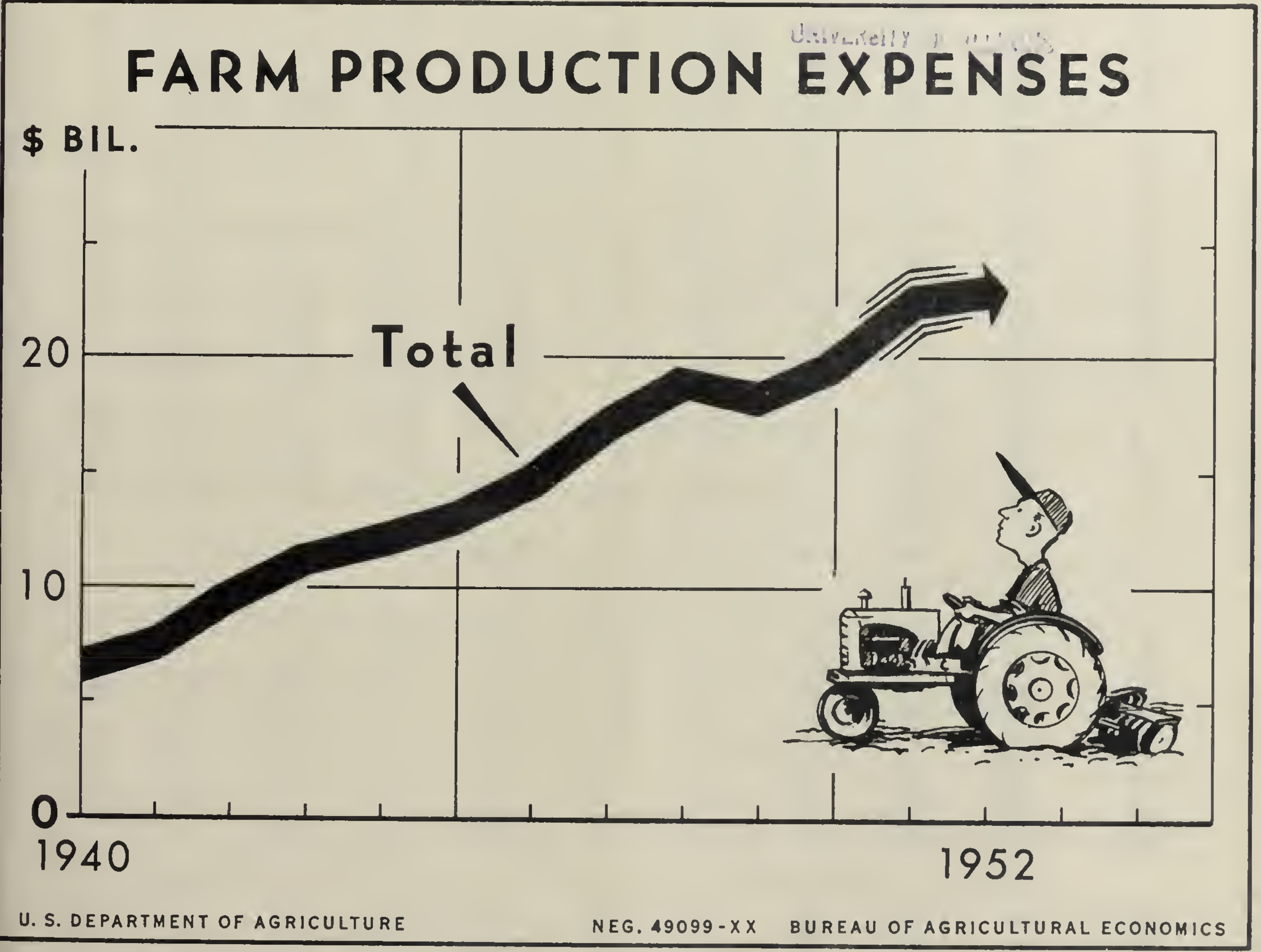

Farm production expenses advanced rapidly from around 5.8 billion dollars in 1938 to about 18.9 billion in 1948. They declined slightly in 1949 primarily because of a drop in prices paid for feed grains. Largely as a result of the Korean war production expenses advanced rapidly after 1949, and were a record high-approximately 23 billion-in 1952; nearly 3½ times those in 1940. They probably will average slightly lower in 1953.

Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | Commodities, interest, taxes and wage rates | Commodities only | Feed | Live-stock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 1/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 75 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 77 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 81 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 83 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 121 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 140 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 153 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 162 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 118 | 103 | 100 | 71 | --- | --- | 105 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 119 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 128 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 129 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 131 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 128 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 129 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 132 | 119 | 132 | 146 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 132 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 124 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 106 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 92 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 87 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 94 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 82 |
| 1935 | 98 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 99 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 106 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 100 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 105 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 122 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 155 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 191 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 203 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 209 | 198 | 200 | 324 | 143 | 199 | 180 | 176 | 215 | 141 | 193 | 351 |
| 1951 | 231 | 220 | 225 | 395 | 150 | 212 | 194 | 189 | 239 | 149 | 197 | 388 |
| 1952 | 237 | 221 | 239 | 331 | 151 | 222 | 201 | 200 | 240 | 153 | 223 | 416 |
| Jan. | 238 | 224 | 242 | 370 | --- | 219 | --- | --- | --- | --- | --- | 412 |
| Feb. | 240 | 227 | 243 | 376 | --- | 224 | --- | --- | --- | --- | 219 | --- |
| Mar. | 239 | 226 | 242 | 372 | 151 | 222 | 201 | 196 | 240 | --- | 220 | --- |
| Apr. | 240 | 226 | 242 | 373 | --- | --- | --- | 195 | --- | 153 | 223 | 421 |
| May | 240 | 227 | 240 | 373 | --- | --- | --- | --- | --- | --- | 227 | --- |
| June | 237 | 220 | 237 | 325 | 151 | 222 | 202 | 202 | 239 | --- | --- | --- |
| July | 236 | 220 | 235 | 324 | --- | 222 | --- | --- | --- | --- | --- | 418 |
| Aug. | 237 | 221 | 240 | 322 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 235 | 219 | 242 | 300 | 151 | 222 | 203 | 203 | 241 | 154 | 224 | --- |
| Oct. | 233 | 217 | 237 | 293 | --- | --- | --- | --- | --- | --- | --- | 412 |
| Nov. | 231 | 215 | 234 | 282 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 229 | 213 | 234 | 262 | 151 | 222 | 203 | 206 | 241 | --- | --- | --- |
| 1953 | | | | | | | | | | | | |
| Jan. | 233 | 214 | 232 | 275 | --- | 223 | --- | --- | --- | --- | --- | 425 |
| Feb. | 231 | 210 | 228 | 265 | --- | --- | --- | --- | --- | --- | 213 | --- |
| Mar. | 231 | 211 | 227 | 266 | --- | --- | --- | --- | --- | --- | 210 | --- |

1/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices," Bureau of Agricultural Economics, September 30, 1952.

# THE FARM COST SITUATION

Approved by Outlook and Situation Board, April 7, 1953

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## GENERAL SITUATION

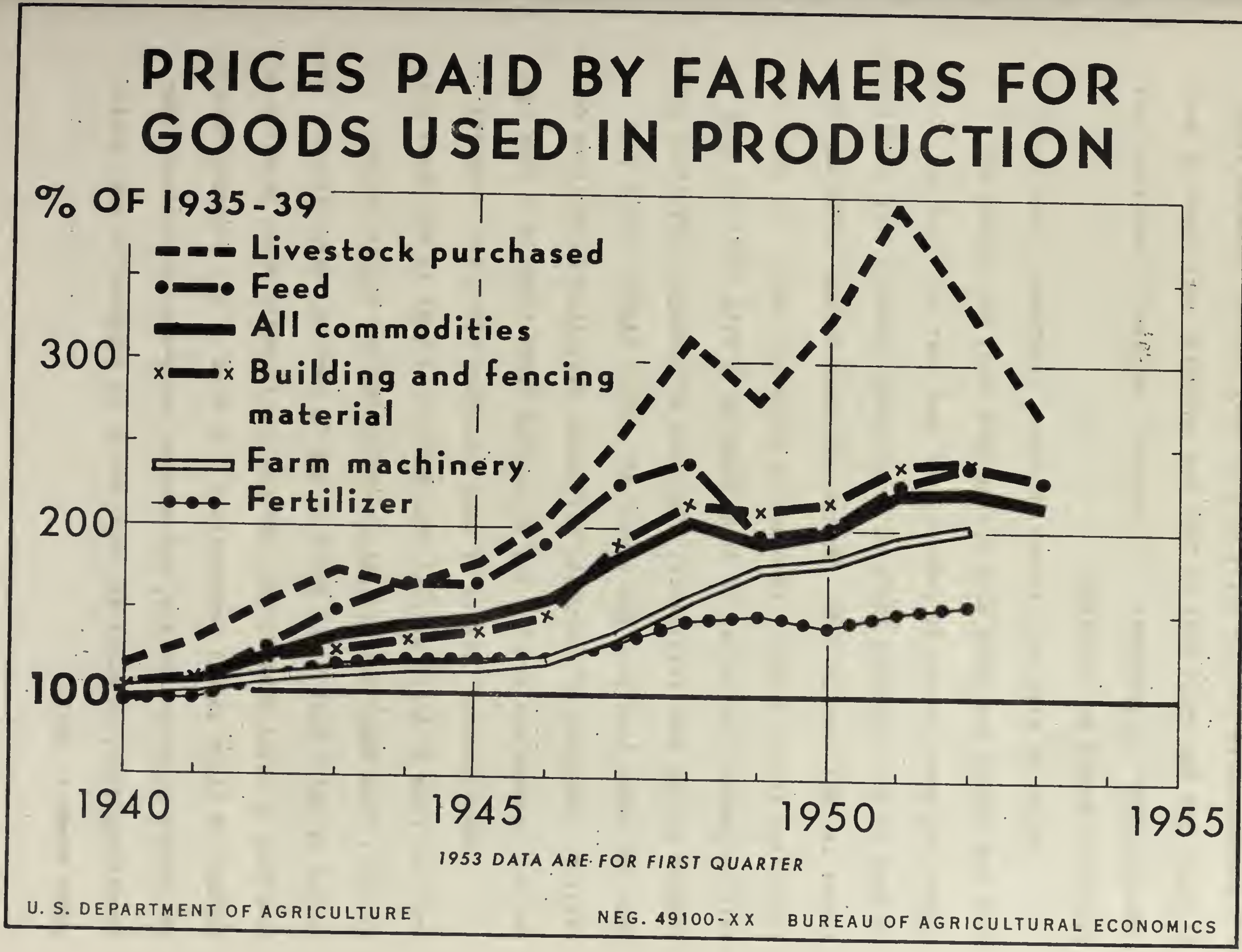
With prices received by farmers for most farm products at a substantially lower level in 1953 than in 1952 and cost rates to farmers only slightly lower, the cost-price squeeze in agriculture this year is more severe than in 1952, and net farm income is expected to be lower. Prices received by farmers in the first three months of 1953 averaged 9 percent below the comparable quarter in 1952 and 10 percent above the pre-Korean level (first half of 1950).

Prices paid for commodities and services used in farm production, including interest, taxes and wage rates in the first quarter of 1953 averaged about 3 percent below the same quarter a year ago but were still about 14 percent above the average for the first half of 1950 (preKorea). The decline from a year ago was due mainly to a drop in prices of feed and of feeder and replacement livestock. Prices paid by farmers for motor supplies, motor vehicles, and building and fencing materials generally have remained unchanged during the past year. Those for farm machinery, farm supplies, and fertilizer, tax rates and wages paid to hired labor have increased slightly.

Prices paid for items used in production including interest, taxes and wage rates probably will average somewhat lower for 1953, as a whole, than in 1952 (fig. 1). Prices of feeder and replacement livestock may continue at about current levels during the next few months and then decline seasonally. Feed grain prices may strengthen some in the next 2 or 3 months. After that time prospects for the 1953 crop will largely determine the level of prices. Prices farmers pay for other production items are not expected to change greatly from 1952 levels.

Costs and returns prospects in 1953 will differ greatly according to location and type of farm. Costs will continue about at 1952 levels on most types of farms, although some reduction in expenditures will result on those types of farms that make large purchases of feed and livestock. Reductions in net returns will be greatest on those farms whose commodities have had greatest price reductions from 1952, such as beef cattle. Total costs as well as gross income depend upon the scale of production as well as on the level of prices paid and prices received. At prospective cost-price relationships for 1953, farmers in most areas are likely to continue production at relatively high levels.

Farm laborers and supplies of practically all items and materials used in farm production are expected to be adequate to meet needs for 1953. Farm wage rates in 1952 averaged about 7 percent above 1951 and a little over 4 times the prewar (1935-39) average. A slight increase in farm wage rates and a further decrease in the supply of farm labor are expected in 1953. Farmers in some areas may find it difficult to obtain dependable and experienced help and to get some seasonal jobs done on time.



PRICES PAID BY FARMERS FOR GOODS USED IN PRODUCTION

1953 DATA ARE FOR FIRST QUARTER

U. S. DEPARTMENT OF AGRICULTURE NEG. 49100-XX BUREAU OF AGRICULTURAL ECONOMICS

FIGURE I

Inventories of motor vehicles and machines on farms January 1, 1953 were the largest on record. Materials allocated to farm machinery manufacturers for the first half of 1953 will be about as large as those for the first half of 1952 and generally sufficient to meet manufacturers' requirements. Consequently supplies of machinery and equipment should be plentiful.

Prices of alfalfa, clovers, fescues, ryegrasses, seed wheat, oats and barley are lower this spring than last, but prices are higher for grass seeds, lespedezas, and seed corn this spring. Prices of some of the important kinds of fertilizers probably will be slightly higher in 1953 than in 1952. However, dealers in some areas may lower fertilizer prices slightly in order to stimulate sales. In relationship to prospective prices of farm products it will still pay many farmers to use more fertilizer. Supplies of nitrogen fertilizer available for crops this year are around 16 percent higher than a year earlier. Supplies of phosphate and potash fertilizers available for use this season are about 8 and 10 percent above those of a year ago.

Manufacturers' prices of many important pesticidal chemicals are down from 10 to 50 percent from the prices paid in the first half of 1952. Two important exceptions are sulfur and copper sulfate, prices of which have risen about 15 and 25 percent, respectively. Consumption of pesticides during 1952 was considerably below expectation because of light insect infestations. In view of the expanded capacity to produce major pesticides, and because carry-over stocks were comparatively high, supplies are expected to be adequate to meet anticipated needs in 1953.

## Farm Labor

A slight increase in farm wage rates and a further decrease in the supply of farm labor are in prospect for 1953.

Average wage rates paid by U. S. farmers in January this year were about 3 percent higher than a year ago. This is the smallest increase of any year since the Korean hostilities began. January wage rates were less than 1 percent higher than a year earlier in some parts of the country. Farm wage rates for this year as a whole are expected to be only slightly higher than last year. Among areas and during different seasons the rise will vary depending on the extent of net losses of farm workers to industry and the Armed Forces, on changes in the demand for labor, and on prices received for farm products.

Around one percent fewer workers were employed on farms during the first two months of this year than a year ago. For the same months the drop from 1951 to 1952 was about 2.5 percent. This also approximated the decrease in average annual farm employment from 1951 to 1952 (table 1).

During certain periods in 1953 farmers in some areas will have the usual problems in getting their work done well and in good season. Throughout most of the country the supply of skilled and experienced year-round workers is expected to continue tight. Generally, however, the supply of labor is expected to be sufficient to maintain farm production at high levels. In the past, farm production has increased despite a fairly steady reduction in quantity of labor used (Figure 2-Farm Output and Labor Input). This has been achieved by greater use of mechanical power and other technological developments in farming. The higher skills required by this advanced stage of farm mechanization make it important to maintain an adequate force of experienced and dependable year-round workers on farms.

The decline in farm labor supply from 1952 is not expected to be large. Opportunities for non-farm employment will continue to attract workers to industry because of comparatively high wage rates and other considerations. Estimates of the Department of Commerce indicate that non-farm employment in February of this year was the highest of any February on record. It is difficult to estimate the net change in agricultural workers that will result from the Armed Forces rotation program in 1953.

Greater use of machines, more custom work or additional exchange of labor among neighbors in many instances have helped fill the gap left by workers who leave the farm to enter the Armed Services or take non-farm jobs. Workers from foreign sources are expected to be available for seasonal work in areas where the supply of domestic workers is inadequate.

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-52

(Index numbers, 1935-39 = 100)

| Period or year | Farm employment | | | Man-hours of farm work 2/ | Farm output 3/ | | Gross farm income per man-hour 4/ | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | | Total | Per man-hour | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 103 | 98 | 110 | 112 | 107 | 107 |
| 1941 | 98 | 97 | 101 | 97 | 114 | 118 | 136 | 125 |
| 1942 | 98 | 97 | 101 | 101 | 128 | 127 | 177 | 163 |
| 1943 | 97 | 97 | 96 | 100 | 125 | 125 | 220 | 217 |
| 1944 | 95 | 97 | 88 | 100 | 130 | 130 | 232 | 263 |
| 1945 | 93 | 96 | 83 | 95 | 129 | 136 | 257 | 297 |
| 1946 | 95 | 98 | 85 | 93 | 133 | 143 | 300 | 320 |
| 1947 | 96 | 98 | 88 | 91 | 128 | 141 | 360 | 346 |
| 1948 | 95 | 96 | 91 | 89 | 138 | 155 | 374 | 365 |
| 1949 | 92 | 93 | 89 | 89 | 137 | 154 | 344 | 354 |
| 1950 | 89 | 90 | 85 | 83 | 136 | 164 | 372 | 351 |
| 1951 | 86 | 87 | 81 | 86 | 139 | 162 | 412 | 388 |
| 1952 6/ | 84 | 85 | 79 | 83 | 144 | 173 | 433 | 416 |

1/ Includes farm operators and members of their families working without wages.

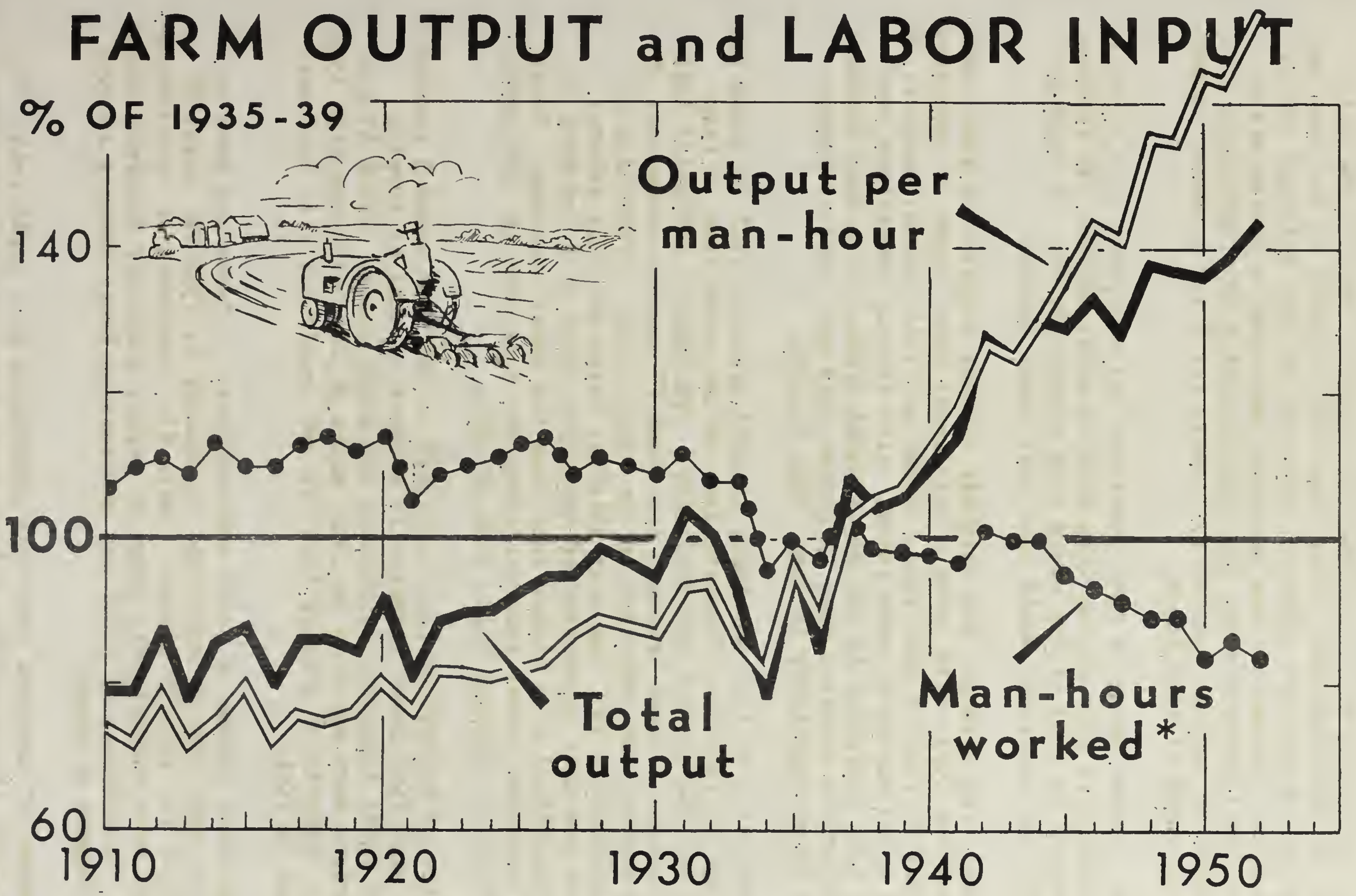
2/ Total man-hours of farm work in terms of the time required by average adult male workers.

3/ Net calendar-year production for eventual human use.

4/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1952.

5/ Simple average of quarterly indexes seasonally adjusted.

6/ Preliminary.



* IN TERMS OF TIME USED BY ADULT MALES

U. S. DEPARTMENT OF AGRICULTURE NEG. 46823A-XX BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 2

## Farm Power and Machinery

Wholesale prices of both farm machinery and motor vehicles are now about 12 percent above the June 1950 prices. Most of the price increases for farm machinery since June 1950 occurred in the last half of that year. There were moderate increases in 1951 but very little change in 1952. Prices of farm machinery and motor vehicles are at a high level but increases since the 1935-39 period have been less than the increases in prices received by farmers for their products or the increase in wages of farm labor.

The present value of farm machinery and equipment on a typical 160-acre hog-dairy farm in the Corn Belt is about $6,000. To replace this machinery at 1953 prices would cost about $12,000. At 1935-39 prices this new machinery would have cost about $6,000.

Large crop acreages and slightly shorter supplies of farm labor in prospect for 1953 would favor a relatively high volume of purchases of machinery by farmers this year. There are indications, however, of a slowing up in buying of some items. Also drouthy conditions, unfavorable crop prospects in the major wheat areas, and a much greater decline in prices received than in prices paid may restrict farmers' purchases of new machinery in some areas in 1953.

Production of farm machinery in 1953 probably will be below the high average of 1948-52. Complete data on the production of farm machinery in 1952 are not yet available. Preliminary estimates indicate production of wheel tractors was about 25 percent below that of 1951 with most of the reduction in the small sizes. Production of crawler tractors in 1952 was only slightly below the 1951 record. Indications are that production of machinery other than tractors in 1952 was maintained at a higher rate than for wheel tractors. Total output of tractors, other farm machinery and equipment in 1952 probably was around 10 percent below that of 1951.

Value of exports of farm machinery in 1952 was about 5 percent below the high 1951 level principally because of smaller foreign takings of wheel tractors, especially the small sizes. About 57,000 wheel tractors were exported in 1952, about 30,000 below the high 1951 shipments. Exports of crawler tractors and repair parts in 1952 were larger than in 1951.

The total volume of power and machinery on farms has been increasing for more than a decade and on January 1, 1952 was about 84 percent above the 1935-39 average (table 2). Purchases of farm machinery in 1952 were sufficiently large to permit a further increase during the year. Inventories of power and machines on farms January 1, 1953 were the largest on record.

Numbers of tractors have been increasing at a rapid rate. On January 1, 1952 it was estimated that there were 4,170,000 tractors of all types on our farms. At the beginning of 1953 it appears that there were about 4.4 million tractors on farms, three and one-third times the 1935-39 average.

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-52

(Index numbers 1935-39 = 100)

| Year or period | Number on farms, January 1 1/ | | | | | | Volume on farms, January 1 2/ | | Gross farm income calendar year 3/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules all ages | Work stock 3 years old and over | Colts under 1 year of age | Tractors | Automobiles | Motortrucks | All machinery and equipment other than tractors and other motor vehicles | All farm power (including work animals) machines and equipment | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 118 | 106 | 105 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 126 | 109 | 132 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 141 | 116 | 179 | 148 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 158 | 121 | 220 | 179 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 162 | 121 | 232 | 183 |
| 1945 | 76 | 77 | 54 | 195 | 106 | 153 | 178 | 126 | 244 | 193 |
| 1946 | 71 | 73 | 42 | 206 | 109 | 159 | 197 | 131 | 279 | 219 |
| 1947 | 64 | 67 | 35 | 220 | 112 | 175 | 219 | 137 | 328 | 257 |
| 1948 | 59 | 62 | 31 | 240 | 108 | 195 | 252 | 147 | 333 | 266 |
| 1949 | 54 | 57 | 28 | 266 | 110 | 212 | 286 | 158 | 306 | 233 |
| 1950 | 49 | 52 | 23 | 291 | 108 | 227 | 310 | 166 | 309 | 239 |
| 1951 | 45 | 48 | 19 | 317 | 110 | 237 | 337 | 175 | 354 | 282 |
| 1952 | 40 | 42 | 16 | 335 | 112 | 248 | 366 | 184 | 359 | 269 |
| 1953 4/ | 36 | 38 | 15 | | | | | | | |

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1/ The 1935-39 average was for horses and mules all ages, 15,750,000 head; for workstock 13,700,000 head; for colts 744,000 head; for tractors 1,244,000; for automobiles 3,896,000; and there were 973,000 motortrucks.

2/ In terms of 1935-39 prices.

3/ Includes Government payments.

4/ Preliminary.

The increase in the total volume of power and machinery on farms has taken place while the horse and mule population has been decreasing sharply. On January 1, 1953 there were about 36 percent as many horses and mules on farms as in 1935-39.

Demand for workstock has been declining and prices in recent years have been low. There have been continuous and heavy reductions in the size of the colt crop. In 1952 only 113,000 colts were raised, the smallest crop in more than a century and only 5 percent as large as the average colt crop at the beginning of World War I. Only 5.6 million head of horses and mules of all ages were on farms on January 1, 1953.

About 93 percent were work animals (3 years and over). This number of work animals is about one-fourth of the peak number of 1923 and about 38 percent of the 1935-39 average. A relatively high percentage of horses and mules now on farms are kept primarily for purposes other than field work.

## Feed

Stocks of feed grains on January 1 were up 2 percent compared with a year earlier, and the carry-over this fall probably will be up 20-25 percent from last year. Fifteen percent more beef cattle on feed, 11 percent fewer fall pigs being marketed, 15 percent fewer spring pigs expected to be farrowed, 3 to 4 percent fewer chickens in laying flocks, probably more farm chickens and broilers and fewer turkeys to be raised add up to about 2-3 percent fewer grain-consuming livestock for the feeding year beginning last October.

Prices received by farmers for feed grains and hay in March 1953 averaged about 9 percent below those of a year ago (table 3). Corn, oats, barley, and hay were lower in price than a year ago. Sorghum grains were higher.

Prices paid by farmers for most byproduct feeds and commercial mixed feeds were lower in March 1953 than a year ago. The average value of the poultry ration was 6 percent below March 1952, and the value of the concentrate ration fed to milk cows in milk selling areas was 5 percent less than a year ago. The index of prices paid by farmers for all feed was 6 percent less. Prices probably will continue below those of a year ago through the first half of 1953. Prospects for 1953 feed grain crops will become important in influencing prices in the late spring and summer.

Prices received by farmers for all livestock and livestock products on March 15 averaged 12 percent below March a year ago. Prices of hogs and eggs were higher, but the price of beef cattle was down 36 percent, lambs 21 percent, butterfat about 14 percent, milk 10 percent and wool 3 percent.

Compared with a year ago returns per dollar of feed cost are higher for hogs, eggs and broilers and lower for milk, butterfat, beef cattle and sheep. Despite the drop in the price of beef cattle, beef still gives above average returns per $1.00 of feed (table 4). However, returns per $1.00 of feed cost for cattle feeders in 1951-52 were only equal to the 1935-39 average and below the 1947-49 average. Returns for 1952-53 probably will be below average. Butterfat dairying with March prices gave the lowest return of any livestock enterprise in relation to 1935-39. Returns have been below average for hogs for the past two years, but now are above average.

Table 3.- Average prices of feeds in the United States, March 15, 1953 with comparisons

| Item | Unit | March 15, 1951 | March 15, 1952 | Sept. 15, 1952 | March 15, 1953 |
|---|---|---|---|---|---|
| Prices received by farmers | | | | | |
| Corn | Bushel | $ 1.60 | $ 1.65 | $ 1.71 | $ 1.46 |
| Oats | do. | .92 | .89 | .84 | .78 |
| Barley | do. | 1.34 | 1.36 | 1.43 | 1.32 |
| Sorghum grain | Cwt. | 2.12 | 2.52 | 3.02 | 2.66 |
| Hay, baled | Ton | 23.10 | 25.10 | 25.00 | 24.40 |
| Feed grains and hay, Index number (1935-39 = 100) | | 232 | 241 | 246 | 219 |
| Prices paid by farmers | | | | | |
| Mixed dairy feed 16% | Cwt. | 4.07 | 4.43 | 4.37 | 4.18 |
| Laying mash | do. | 4.92 | 5.29 | 5.35 | 5.00 |
| Broiler mash 1/ | do. | 5.43 | 5.74 | --- | 5.34 |
| Cottonseed meal | do. | 4.89 | 5.06 | 5.33 | 4.95 |
| Soybean meal | do. | 4.75 | 5.37 | 6.08 | 4.91 |
| Linseed meal | do. | 4.55 | 5.01 | 5.43 | 5.27 |
| Meat scrap | do. | 6.56 | 6.56 | 6.73 | 5.48 |
| Bran | do. | 3.31 | 4.02 | 3.77 | 3.62 |
| Middlings | do. | 3.47 | 4.09 | 3.96 | 3.66 |
| Alfalfa hay, baled | Ton | 34.10 | 39.10 | 37.60 | 38.50 |
| Prices paid by farmers for feed, Index number (1935-39 = 100) | | 224 | 242 | 242 | 227 |
| Average value of concentrate ration fed to poultry and milk cows 2/ | | | | | |
| Fed to poultry | Cwt. | 4.00 | 4.24 | 4.28 | 3.97 |
| Fed to milk cows in milk selling areas | Cwt. | 3.54 | 3.87 | 3.88 | 3.68 |
| Fed to milk cows in cream selling areas | Cwt. | 3.21 | 3.45 | 3.40 | 3.25 |

1/ Price of chick starter mash used in this table before 1953.

2/ Value of the corn, oats, oil meal, millfeed, commercial mixed feed, etc., making up 100 pounds of "grain" ration.

- - - -

With most livestock enterprises giving below average returns in relation to feed prices, special attention should be given by livestock producers to use of practices that reduce costs.

Table 4.- Returns per $1.00 of feed cost of livestock enterprises, United States, March 15, 1953, with comparisons 1/

| Livestock enterprise or product | 1935-39 average | 1947-49 average | March 15, 1951 | March 15, 1952 | Sept. 15, 1952 | March 15, 1953 |
|---|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.72 | 1.68 | 1.56 | 1.14 | 1.62 | 1.61 |
| Broilers | 1.60 | 1.63 | 1.62 | 1.39 | 1/ | 1.51 |
| Milk | 1.92 | 1.92 | 1.94 | 1.94 | 1.98 | 1.74 |
| Butterfat | 1.55 | 1.42 | 1.40 | 1.61 | 1.52 | 1.37 |
| Hogs | 1.50 | 1.65 | 1.64 | 1.24 | 1.36 | 1.69 |
| Sheep | 1.44 | 1.41 | 2.64 | 1.49 | 1.40 | 1.33 |
| Beef | 1.39 | 1.74 | 2.53 | 2.21 | 1.88 | 1.52 |
| Cattle | | | 1951-52 | | 1952-53 | |
| feeding 2/ | 1.21 | 1.49 | 1.22 | | 3/ | |
| | | | (Index numbers 1935-39=100) | | | |
| | Percent | Percent | Percent | Percent | Percent | Percent |
| Eggs | 100 | 98 | 91 | 66 | 94 | 94 |
| Broilers | 100 | 102 | 101 | 87 | 1/ | 94 |
| Milk | 100 | 100 | 101 | 101 | 103 | 91 |
| Butterfat | 100 | 92 | 90 | 104 | 98 | 88 |
| Hogs | 100 | 110 | 109 | 83 | 90 | 113 |
| Sheep | 100 | 98 | 183 | 103 | 97 | 92 |
| Beef | 100 | 125 | 182 | 159 | 135 | 109 |
| Cattle | | | 1951-52 | | 1952-53 | |
| feeding 2/ | 100 | 123 | 100 | | 3/ | |

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1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of chick starter per pound of broiler in 1935-39. In 1951 and 1952, 3½ pounds of chick starter and in 1953, 3½ pounds of broiler mash. No prices available on broiler mash before 1953. 7½ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lambs. It was assumed that for each 100 pounds of sheep and lamb produced 20 pounds of wool was produced from the same feed. The quantity of hay for milk cows, beef cattle and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost 1/4 as much per pound as they would if obtained from hay.

2/ Based on table 6, Livestock and Meat Situation, Sept.-Oct., 1952. Designed to represent average feeding experience in the Corn Belt.

3/ Season not completed.

## Seeds

Farmers are paying lower seed prices this spring than last for alfalfa, clovers, fescues, ryegrasses, seed wheat, oats, and barley according to early season reports. Sharpest declines in prices from last year have occurred for tall fescue, alfalfa, and Ladino clover. On the other hand prices are higher than a year earlier for most of the grass seeds, lespedeza, and seed corn. Advances are greatest for lespedezas and late forage crop seeds, such as the millets except Japanese, Sudangrass, and the sorgos ("canes").

Production in 1952 of the 29 seed crops for which the Bureau of Agricultural Economics made estimates totaled 968 million pounds, 25 percent larger than in 1951 and 10 percent above the 1941-50 average. Imports of these seeds from July 1, 1952 through February, 1953, totaled 66.4 million pounds, were a third larger than during the same period a year earlier and nearly 2½ times the 1941-50 average. But the carry-over of these seeds into the 1952 crop year, totaling 531 million pounds, was about a seventh smaller than a year earlier. However, it was nearly three times the 1941-50 average which includes 7 out of 10 years in which the carry-over of Austrian Winter peas and lupine was only a small fraction of the record 1951 and 1952 carry-overs.

With increased production and imports more than offsetting the smaller carry-over, the supply of more than 1.5 billion pounds of the 29 legume and grass seeds for planting during the 1952-53 season is 9 percent larger than for the preceding season and 43 percent above the 1941-50 average. The supply of each of the legumes, except lespedeza and purple vetch, is above average, but the supply of such grasses as timothy, redtop, crested wheatgrass, and Sudangrass seed is much below average, and also about a fifth to a third smaller than a year ago. Except for these four seeds, lespedeza, and some of the late forage crop seeds, there seems to be enough seed to take care of expected requirements and still leave larger than average carry-overs of most kinds.

## Fertilizer

Prices of fertilizer to farmers in the spring of 1953 probably are a little higher than last fall although wholesale prices for some items remain unchanged. Wholesale prices for ammonium sulfate and for superphosphate are up 10 and 7 percent over last spring. Wholesale prices for mixed fertilizers are around 2 percent higher than a year ago. The increased freight rates on fertilizer prices to farmers were reflected in retail prices for fertilizer last fall, so that prices in the spring of 1953 should generally show little change.

Operation of typical 160-acre southern Piedmont cotton farms growing about 15 acres of cotton, 16 acres of corn and 10 acres each of small grain and hay used about 10.7 tons of fertilizer in 1952 at a cost of about $450. In 1940 this quantity of fertilizer would have cost about $260. In 1953 it probably will cost the farm operator about $470.

Revised estimates of supplies of nitrogen (N) phosphoric oxide ($P_2O_5$) and potash ($K_2O$) available for use during the year ending June 30, 1953 indicate an aggregate increase of approximately 11 percent over the supply available the previous year.

Nitrogen (N): The supply available for the year 1952-53 is estimated at 1,660 thousand tons of nitrogen, 16.5 percent above the 1,425 thousand tons reported as available last year. Current indications are that available supplies will be about 4.7 percent above the estimates made last fall. Nitrogen solutions probably will comprise about 36 percent of the total for 1952-53, compared with about 35 percent last year.

Phosphoric oxide ($P_2O_5$): Present indications are that supplies of $P_2O_5$ available for 1952-53 will be about 8 percent above those for 1951-52. The current estimate is that 2,410 thousand tons will be available for use as fertilizer for the year ending June 30, 1953. This does not include quantities available in the form of ground rock phosphate and other materials.

Potash ($K_2O$): Revised estimates indicate that supplies of $K_2O$ for the 1952-53 season will be about 1,745 thousand tons, 10 percent above those available last year.

In contrast with fixed expenses such as taxes, interest and normal repairs and replacement, expenditures made by individual farmers for fertilizer can be varied a great deal from year to year. The question faced by the farmer is one of determining how much fertilizer to use. This depends on the value of the additional yield obtained from an additional quantity of plant nutrients and the cost of that much fertilizer.

Some estimates of response of corn to fertilizer obtained in the eastern section of the Corn Belt indicate that at current prices and costs, the most profitable rate of fertilizer application per acre averages about 175 pounds of plant nutrients, or 875 pounds of a fertilizer carrying 20 percent plant nutrients. This probably is more than 10 times the rate applied on the average acre of corn in this area.

The crop response to applications of fertilizer, of course, varies greatly from farm to farm. The farmer who is short of labor will be interested in the estimate that at the most profitable rate of application, the yield of corn per hour of man labor in one farming area in the eastern Corn Belt is about 3 times as large as where no fertilizer is applied. This is a broad average. Based on the estimated average yield response and on surveys of production costs, a net return of $35 per acre above all costs of producing corn in one farming area in the Corn Belt would be obtained if 70 pounds of plant nutrients were applied. But production costs vary among individual farmers. For example, if the total production cost per acre of corn were $10 higher than in the instance just related, an application of 130 pounds of plant nutrients would be needed to obtain net returns of $35 per acre. When fixed costs are high it is important to give particular attention to practices that increase yields. In many areas a higher rate of application of fertilizer on a somewhat smaller acreage of corn and use of fertilizer as needed to establish more improved hay and pasture would reduce the cost of feed production and increase net incomes.

## Building Materials, Supplies and Containers

There has been almost no change in the average price of farm building materials in the last 2 years. The last change of any consequence occurred shortly after the outbreak of the Korean War when prices paid by farmers for building materials increased 12 percent in less than a year. Since March 1951 these prices have remained at or near the record high level of almost two and two-thirds times 1940.

These cost estimates are based on changes in the cost of a bill of materials for a typical poultry house large enough for 200 hens. At U.S. average prices, these materials (exclusive of sand and gravel) would have cost $304 in 1940, $717 in June 1950, $801 in March 1951, and $803 in December 1952. Between March 1951 and December 1952 the cost of this bill of materials varied between $798 and $803.

Prices paid by farmers for building materials were slightly lower in mid-February than a month earlier but strengthened a little during March. The dollar volume of all construction put in place in January and February was 5½ percent above a year earlier.

The cost of fencing materials was higher in December 1952 than ever before. Prices increased more than 4 percent in the last half of 1952 largely as a result of the increase in the price of steel. The cost of materials for a mile of fence consisting of 32-inch woven wire, two strands of 4-point barbed wire with alternate steel and wood posts set one rod apart and with 2 galvanized gates was not more than $300 in 1940. These same materials would cost $700 today. To build a mile of cheaper fence comprised of four strands of barbed wire now requires an outlay of $480 for materials compared with less than $200 before World War II.

Prices paid by farmers for farm supplies including containers are at record high levels. In December, they were more than 5 percent higher than a year earlier, and 98 percent higher than in 1940.

Supplies of building materials, fencing materials, supplies and containers are expected to be adequate to meet needs in 1953.

## Pesticides

Manufacturers' prices of many important pesticidal chemicals have been reduced substantially from those of the first half of the 1952 season. Prices of most pesticides remained unchanged after the removal of price controls on March 5. Notable exceptions were the prices of copper sulphate and sulphur which rose about 15 and 25 percent, respectively. However, compared with the first half of 1952, prices of DDT were down nearly 50 percent, BHC 33 percent, aldrin 32 percent, toxaphene 26 percent, and allethrin 25 percent. Prices of several other pesticides were down from 10 to 16 percent.

Supplies of pesticides are expected to be adequate to meet anticipated needs during 1953. During 1951 and 1952, facilities for producing the major synthetic organic pesticides were greatly expanded. Large stocks of some important insecticides, such as DDT and benzene hexachloride, were carried over at the end of the 1952 season. Consumption during 1952 was smaller than expected largely because of the prolonged drought over a large part of the country which reduced the need for control measures against a number of major insect pests. Sulfur supplies for grinding for use as a fungicide and an insecticide are expected to be adequate during 1953 in view of the more widespread use of the synthetic organic fungicides and miticides. Supplies of copper sulfate and other copper fungicides are expected to be adequate for agricultural needs during 1953. Carry-over stocks of herbicides (weed killers) appear to be about normal, and production is being increased to meet the growing demand.

Exports of pesticides have increased rapidly in recent years. These exports, particularly those to countries in the Southern Hemisphere, have tended to level off the seasonal nature of the domestic demand. Although the foreign demand for pesticides is a source of competition for available supplies, exports have helped farmers in the United States by tending to maintain an industry capable of meeting maximum domestic needs.

## Farm Land Values and Rentals

The general advance in farm real estate values that followed the Korean outbreak in July 1950 was largely checked by mid-1952. Prices of farm land rose an average of 24 percent during this 2-year period, and the national index reached 213 (1912-14=100) as of July 1, 1952. This was a new record high, 20 percent above the previous postwar peak reached in November 1948, and 25 percent above March 1920.

Farm real estate values remained essentially unchanged during the 4 months ending November 1, 1952. Only 11 States showed changes of 2 percent or more, with about an equal number showing increases and decreases. The United States index remained at 213 (1912-14=100), the same as in July and only 3 percent above a year earlier.

Regionally, the small changes in values were mainly associated with crop conditions and the trends in prices of the major farm commodities of the area (table 5). This was apparent especially in several southwestern States where the extended drought had reduced crop and pasture yields. The steady decline in prices of meat animals was also reflected in slightly lower prices for grazing lands in the western range States. Land values remained firm to slightly higher in the Southeast, however, as industrial expansion continued and small tracts and farms are in demand for factory sites and part-time farms.

Table 5.- Farm Real Estate: Index numbers of average value per acre and percentage change 1/

| Geographic division | Index numbers (1912-14 = 100) | | | | Increase during year ending | | Change during 4 months ending | |
|---|---|---|---|---|---|---|---|---|
| | 1950 | 1951 | 1952 Mar. | 1952 Nov. | Nov. 1951 | Nov. 1952 | Nov. 1951 | Nov. 1952 |
| | | | | | Percent | Percent | Percent | Percent |
| New England | 158 | 163 | 169 | 172 | 3 | 2 | 1 | -1 |
| Middle Atlantic | 157 | 172 | 190 | 193 | 13 | 4 | 2 | 2 |
| E. North Central | 166 | 194 | 211 | 215 | 15 | 5 | 2 | 0 |
| W. North Central | 141 | 163 | 178 | 178 | 14 | 3 | 2 | 0 |
| South Atlantic | 228 | 255 | 284 | 292 | 15 | 7 | 2 | 1 |
| E. South Central | 264 | 298 | 327 | 327 | 15 | 2 | 2 | -1 |
| W. South Central | 191 | 225 | 253 | 251 | 17 | 5 | 2 | -2 |
| Mountain | 156 | 176 | 188 | 193 | 18 | 1 | 2 | -1 |
| Pacific | 180 | 199 | 213 | 217 | 13 | 0 | 3 | 2 |
| United States | 169 | 193 | 211 | 213 | 15 | 3 | 2 | 0 |

1/ All farm land with improvements as of March 1 except as indicated.

The volume of farm sales during 1952 was probably at a new postwar low as investment demand slackened and prospective buyers became more hesitant to close deals in view of price uncertainties. Farm listings were also at a low level in most areas as present owners were hesitant to sell as long as their investments continued to yield returns comparable with alternative investments. Thus, available farms in many areas are limited to estate settlements, retirements and similar situations where the owners are forced to sell.

Gross rents paid for leased farm lands in 1952 were at a new record high as both cash and share rents advanced. Rents paid on farms rented on a livestock share basis were down slightly because of lower prices for livestock and livestock products. Total gross rents paid in 1952 for all methods of renting amounted to $3,379 million, about 2 percent above 1951. Landlords' expenses also advanced, however, mainly because of the general increase in farm real estate taxes and increased costs for maintaining buildings. As a result, net rents were about the same as in 1951, but the rate of return on the investment was a little lower because of the increase in the market value of farm property.

Cash rents for hay and pasture lands in 1953 may be a little lower than in 1952 in some areas because of drought and poor pasture conditions prevailing in 1952. Rental shares for major crops change slowly, however, but the total value of the crops paid as rent are likely to be lower because of somewhat lower prices.

## Interest, Taxes, and Insurance

Interest payments - Farmers paid about 8 percent more interest on farm-mortgage debt in 1952 than in 1951. In 1953 it is expected that farm-mortgage interest charges may increase by about the same percentage over 1952. The increase in farm-mortgage debt caused the rise in interest payments. On January 1, 1953 this debt was estimated at $6.8 billion which compares with $6.3 billion a year earlier.

Interest rates on farm-mortgage debt at the beginning of 1953 averaged 4.7 percent - the same as a year earlier. The Federal land banks charged an average of 4.1 percent, life insurance companies 4.4 percent, and other lenders 5.0 percent. There was no substantial change in the distribution of farm-mortgage debt by lenders in 1952, and all active lenders showed substantial increases in their holdings of farm-mortgage debt.

Interest paid by farmers on non-real-estate debt, excluding price support loans, was at a record level in 1952 - approximately 10 percent higher than in 1951 and 166 percent higher than in 1945. In early 1953, however, there were indications that the rise in non-real-estate interest payments, which has been sharp and continuous since the war, may have ended. The volume of debt, which chiefly determines the amount of interest paid, apparently is now leveling off and may actually decline in 1953. Interest rates have risen slightly during the past several years but they are not expected to change significantly this year.

The decline in livestock prices which has reduced the capital outlay to buyers has been an important factor in slowing down the use of non-real-estate credit. In sections of the Midwest, non-real-estate debt at the beginning of 1953 was already below the levels of a year earlier.

Taxes - Property taxes levied on farm real estate and personal property by State and local governments are expected to rise again this year. Preliminary indications are that such taxes levied in 1952 and payable largely in 1953 will average 4 or 5 percent higher than in the preceding year. It is likely that farm real estate levies will set a new all-time record.

The impact of farm property taxes is particularly important when net farm income is declining since these taxes are a relatively fixed charge against farmers' assets. Local governments, particularly those in rural areas, continue to rely heavily upon these taxes as a source of revenue, and some State governments also obtain a large amount of revenue from them. In 1952, property taxes paid on a typical 160-acre hog-dairy farm in the Corn Belt were $378, and a further increase to about $400 is expected for 1953. Personal property on this farm on January 1, 1953 consisted of 16 milk cows, 14 other cattle, 62 hogs and pigs, 133 chickens, about $4,000 worth of grain and roughage and $6,000 worth of machinery and equipment. In 1940, taxes on this real and personal property would have been around $170, or about 43 percent of 1953 taxes.

Legislatures in 44 States meet in regular session in 1953. In many of these States, new taxes are being added or higher rates applicable to existing taxes are being imposed. However, in a few cases present taxes are being abandoned, or existing rates lowered. Higher gasoline taxes became effective in January in Illinois and Massachusetts. Few changes are presently indicated in State income taxation in 1953.

Insurance - Premiums and assessments paid by farmers to farm mutual insurance companies probably will be higher in 1953 than in either 1952 or 1951. The increased insurance costs of farmers are due to increases in insurance carried, rather than to increases in rates charged. The assessment rates paid by farmers to farm mutual fire insurance companies averaged about 26.1 cents per $100 of insurance in 1952, compared with 26.7 cents in 1951. About $76 million in premiums and assessments were paid to these companies in 1952 - most of it by farmers.

In recent years, the safety funds (reserves) of farm mutual fire insurance companies have increased at a faster rate than has their insurance. This means that farmers' assessment rates are being increasingly stabilized, thus reducing the probabilities that extra or larger assessments will be necessary in any year.

Federal crop insurance was offered in 874 counties in 1952. About 346,000 farmers were insured and premiums paid amounted to more than $21 million. Approximately 45,000 indemnity payments were received by farmers, amounting to more than $20 million. Premiums paid were more than indemnities received with respect to all crop insurance programs except the one on multiple crops.

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Preliminary reports indicate that farmers paid about $63 million as hail insurance premiums in 1952, for more than $1.5 billion of insurance on growing crops--more than in any prior year. Farmers received about $33 million in loss payments because of hail damage to their crops.

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1954 OUTLOOK ISSUE
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# THE Farm Cost SITUATION

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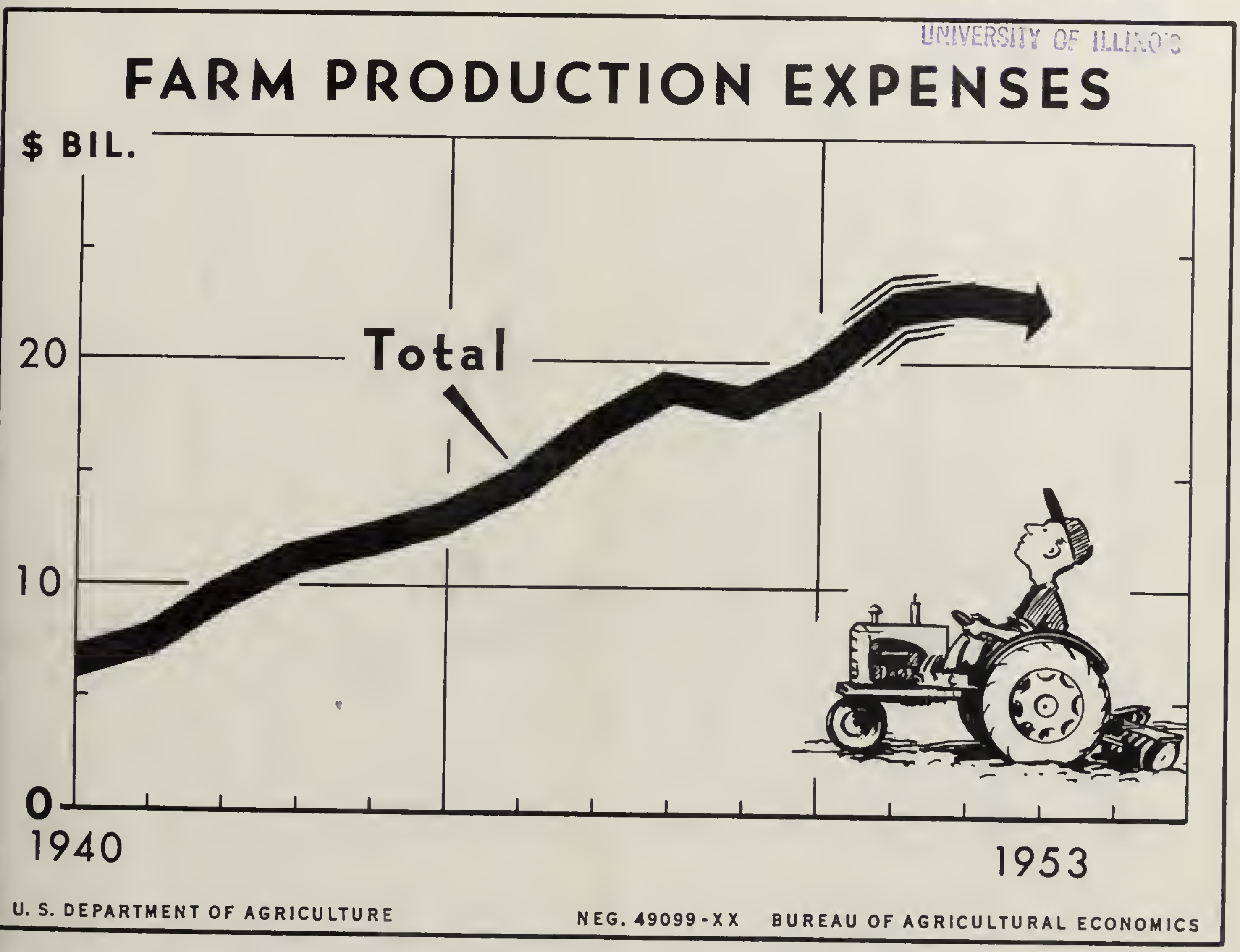
FARM PRODUCTION EXPENSES

U. S. DEPARTMENT OF AGRICULTURE NEG. 49099-XX BUREAU OF AGRICULTURAL ECONOMICS

Farm production expenses advanced rapidly from around 5.8 billion dollars in 1938 to about 18.9 billion in 1948. They declined slightly in 1949 primarily because of a drop in prices paid for feed grains. Largely as a result of the Korean war, production expenses advanced rapidly after 1949, and were a record high-approximately 23 billion -- in 1952; nearly 3½ times those in 1940. They declined about 2 percent from 1952 to 1953, and probably will average slightly lower in 1954.

Goods and services used in production: Prices paid by farmers and farm wage rates, United States

(Index numbers 1935-39 = 100)

| Year | Commodities, interest, taxes and wage rates 1/ | Commodities only | Feed | Live-stock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 2/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910 | 75 | 78 | 93 | 74 | --- | --- | 65 | 69 | 69 | 96 | 78 | 79 |
| 1911 | 77 | 79 | 94 | 69 | --- | --- | 65 | 71 | 71 | 96 | 90 | 81 |
| 1912 | 81 | 82 | 98 | 77 | --- | --- | 65 | 71 | 71 | 98 | 98 | 83 |
| 1913 | 81 | 81 | 92 | 90 | --- | --- | 65 | 73 | 70 | 99 | 81 | 86 |
| 1914 | 83 | 82 | 97 | 93 | --- | --- | 65 | 73 | 64 | 100 | 75 | 83 |
| 1915 | 84 | 84 | 96 | 92 | --- | --- | 67 | 78 | 70 | 106 | 75 | 83 |
| 1916 | 93 | 93 | 104 | 100 | --- | --- | 71 | 86 | 81 | 121 | 104 | 93 |
| 1917 | 121 | 126 | 167 | 128 | --- | --- | 80 | 115 | 94 | 133 | 138 | 117 |
| 1918 | 140 | 145 | 178 | 146 | --- | --- | 101 | 149 | 111 | 169 | 149 | 146 |
| 1919 | 153 | 157 | 198 | 148 | --- | --- | 105 | 157 | 130 | 178 | 170 | 170 |
| 1920 | 162 | 157 | 198 | 130 | --- | --- | 108 | 156 | 141 | 177 | 202 | 199 |
| 1921 | 118 | 103 | 100 | 71 | --- | --- | 105 | 135 | 108 | 149 | 104 | 129 |
| 1922 | 119 | 102 | 108 | 87 | --- | --- | 93 | 116 | 110 | 125 | 100 | 127 |
| 1923 | 128 | 111 | 129 | 90 | --- | --- | 97 | 120 | 110 | 131 | 105 | 142 |
| 1924 | 129 | 113 | 132 | 94 | 125 | 88 | 101 | 125 | 111 | 124 | 107 | 150 |
| 1925 | 131 | 117 | 136 | 100 | 133 | 89 | 101 | 124 | 113 | 136 | 122 | 150 |
| 1926 | 129 | 114 | 116 | 106 | 138 | 87 | 101 | 125 | 112 | 135 | 142 | 151 |
| 1927 | 129 | 114 | 122 | 119 | 123 | 89 | 101 | 122 | 110 | 118 | 125 | 152 |
| 1928 | 133 | 119 | 132 | 146 | 120 | 90 | 101 | 123 | 109 | 128 | 111 | 152 |
| 1929 | 132 | 118 | 130 | 143 | 119 | 92 | 100 | 122 | 110 | 127 | 113 | 154 |
| 1930 | 124 | 109 | 116 | 106 | 113 | 89 | 99 | 120 | 107 | 124 | 110 | 146 |
| 1931 | 106 | 91 | 82 | 74 | 96 | 89 | 98 | 111 | 95 | 112 | 88 | 115 |
| 1932 | 92 | 80 | 61 | 61 | 95 | 88 | 93 | 98 | 87 | 98 | 57 | 86 |
| 1933 | 87 | 80 | 70 | 56 | 93 | 87 | 90 | 91 | 90 | 91 | 61 | 73 |
| 1934 | 94 | 92 | 98 | 56 | 99 | 92 | 94 | 96 | 101 | 103 | 88 | 82 |
| 1935 | 98 | 98 | 101 | 94 | 99 | 93 | 97 | 96 | 99 | 102 | 105 | 88 |
| 1936 | 98 | 99 | 104 | 90 | 100 | 97 | 98 | 97 | 98 | 97 | 93 | 94 |
| 1937 | 106 | 107 | 118 | 102 | 102 | 101 | 100 | 102 | 102 | 101 | 130 | 107 |
| 1938 | 100 | 98 | 89 | 101 | 101 | 107 | 103 | 104 | 101 | 100 | 94 | 107 |
| 1939 | 98 | 98 | 88 | 113 | 98 | 102 | 102 | 101 | 100 | 100 | 78 | 105 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 121 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 156 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 192 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 204 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 210 | 198 | 200 | 324 | 143 | 199 | 180 | 176 | 215 | 141 | 193 | 351 |
| 1951 | 232 | 220 | 225 | 395 | 150 | 212 | 194 | 189 | 239 | 149 | 197 | 388 |
| 1952 | 237 | 221 | 239 | 331 | 151 | 222 | 201 | 200 | 240 | 153 | 223 | 416 |
| Jan. | 239 | 224 | 242 | 370 | --- | 219 | --- | --- | --- | --- | --- | 412 |
| Feb. | 240 | 227 | 243 | 376 | --- | 224 | --- | --- | --- | --- | 219 | --- |
| Mar. | 240 | 226 | 242 | 372 | 151 | 222 | 201 | 196 | 240 | --- | 221 | --- |
| Apr. | 241 | 227 | 242 | 373 | --- | --- | --- | 195 | --- | 153 | 224 | 421 |
| May | 241 | 227 | 240 | 373 | --- | --- | --- | --- | --- | --- | 227 | --- |
| June | 237 | 220 | 237 | 325 | 151 | 222 | 202 | 202 | 239 | --- | --- | --- |
| July | 237 | 220 | 235 | 324 | --- | 222 | --- | --- | --- | --- | --- | 418 |
| Aug. | 237 | 221 | 240 | 322 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 236 | 219 | 242 | 300 | 151 | 222 | 203 | 203 | 241 | 154 | 224 | --- |
| Oct. | 233 | 217 | 237 | 293 | --- | --- | --- | --- | --- | --- | --- | 412 |
| Nov. | 232 | 215 | 234 | 282 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 230 | 213 | 234 | 262 | 151 | 222 | 203 | 206 | 241 | --- | --- | --- |
| 1953 | | | | | | | | | | | | |
| Jan. | 234 | 214 | 232 | 275 | --- | 223 | --- | --- | --- | --- | --- | 425 |
| Feb. | 232 | 210 | 228 | 265 | --- | --- | --- | --- | --- | --- | 213 | --- |
| Mar. | 232 | 210 | 227 | 266 | 151 | 225 | 203 | 204 | 241 | 154 | 210 | --- |
| Apr. | 229 | 207 | 223 | 248 | --- | 224 | --- | 204 | --- | 154 | 205 | 420 |
| May | 229 | 207 | 220 | 250 | --- | --- | --- | --- | --- | --- | 201 | --- |
| June | 223 | 200 | 215 | 204 | 152 | 224 | 204 | 201 | 241 | --- | --- | --- |
| July | 225 | 202 | 212 | 220 | --- | 224 | --- | --- | --- | --- | --- | 425 |
| Aug. | 225 | 201 | 211 | 214 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 223 | 199 | 210 | 210 | --- | --- | --- | --- | --- | 154 | 197 | --- |

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1/ Revised to reflect revisions in interest and tax indexes.
2/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices," Bureau of Agricultural Economics, September 30, 1952.

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# THE FARM COST SITUATION

Approved by Outlook and Situation Board, October 14, 1953

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## GENERAL SITUATION

Cost rates for farm production items have eased off slightly in 1953 and some further decline is probable in 1954. Prices received by farmers for products sold also may average slightly lower next year. This means that the cost-price squeeze is likely to continue in 1954 about the same as in 1953.

The cost-price squeeze intensified considerably in late 1952 and early 1953 but has changed relatively little in recent months. Prices paid for commodities and services used in production including interest, taxes and wage rates, for the first 9 months of 1953 averaged about 4.5 percent below the same period a year earlier but prices received were down 11 percent. Wage rates paid for hired labor in 1953 and prices paid for fertilizer, gasoline and some other supplies are averaging between 1 and 2 percent higher than in 1952. Interest rates and taxes paid also advanced slightly from 1952 to 1953. Prices paid for most other items remained firm or advanced slightly (fig. 1). The decline from a year ago was due to an 8 percent decrease in prices paid for feed and a 31 percent drop in prices paid for feeder and replacement livestock.

The supply of farm labor and of practically all production goods have been adequate to meet needs in 1953 and no shortages are expected in 1954. Nonfarm job opportunities will continue to lure some workers from farms and the supply of experienced year-round workers is expected to be tight. Production of farm machinery in 1953 is moderately below 1952. However, numbers of tractors, tractor machines and equipment, trucks and automobiles on farms have continued to increase. The total volume of power, machinery, and equipment on farms January 1, 1953 was about 88 percent above the average for 1935-39. Prices of farm machinery in 1954 probably will be near current levels but price concessions may be more general and liberal.

Total supplies of feed grains and other concentrates for the 1953-54 season probably will be a little larger than a year ago because of the large carry-over of corn. It seems probable that less feed grains and other concentrates will be fed to cattle and hogs in 1953-54 than a year ago but more to poultry and milk cows. The net result will be slightly more feed per unit of livestock in 1953-54 than a year earlier.

Lower prices are being paid by farmers this fall than last spring for most legume and grass seeds. Notable exceptions are Kentucky Bluegrass and redtop, prices of which are the highest on record. Prices of these two seeds probably will increase between now and next spring. Total supply of most of the important legumes, grasses and winter cover crops seeds is about a third below last year, but 2 percent above the 1942-51 average.

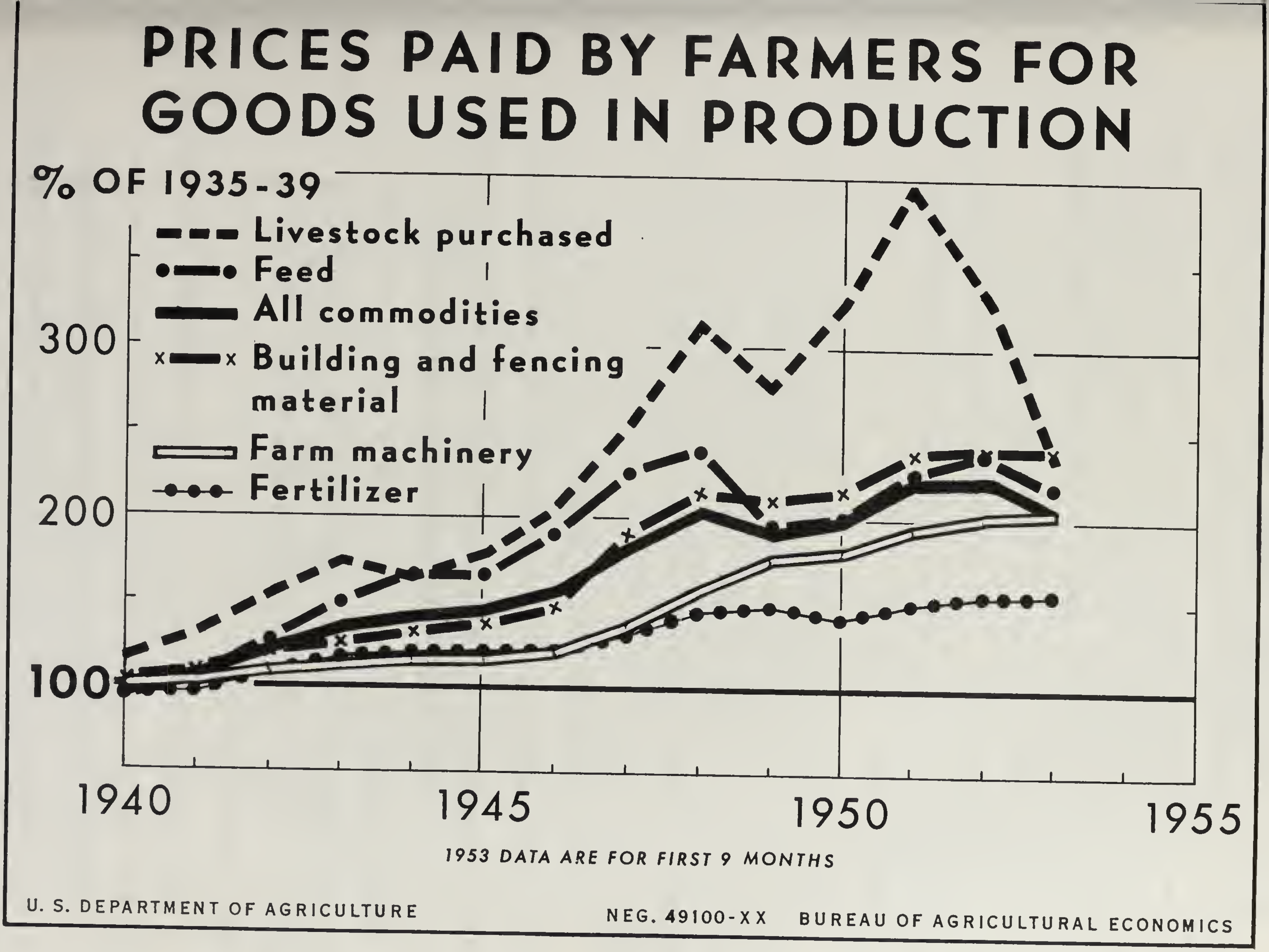
PRICES PAID BY FARMERS FOR GOODS USED IN PRODUCTION
% OF 1935-39
Livestock purchased
Feed
All commodities
Building and fencing material
Farm machinery
Fertilizer
300
200
100
1940
1945
1950
1955
1953 DATA ARE FOR FIRST 9 MONTHS
U. S. DEPARTMENT OF AGRICULTURE
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FIGURE 1

Prices of fertilizer are currently about 1.5 times their 1935-39 average and are slightly above those in 1952-53. On the whole, little change from present price levels is expected for the coming year. However, prices may be lower for some particular kinds. Preliminary estimates indicate the aggregate supply of the three major plant nutrients for the 1953-54 season probably will exceed the record output of 1952-53 by around 13 percent. The supply of nitrogen (N) probably will be up 11 percent, that of phosphates ($P_2O_5$) about 12 percent greater, and potash ($K_2O$) about 15 percent.

Prices of building materials, farm supplies and fencing materials have changed little during the past 2 years and probably will average near current levels in 1954. They are now nearly 2½ times their 1935-39 average. Supplies are expected to be adequate to meet farmers' needs in 1954.

Stocks of pesticides held by manufacturers and dealers at the end of the 1953 season are considerably smaller than the large inventories of a year ago. Much of this reduction is due to smaller stocks of DDT, benzene hexachloride, and similar insecticides. Capacity of the chemical industry to produce pesticides is more than adequate to supply anticipated needs for the immediate future. Prices of most pesticides are lower than a year ago and probably will remain at present levels in 1954.

Land values and net rentals of farm property in 1953 are lower than a year ago, and both are expected to average slightly lower next year. Interest rates and taxes on real estate and other farm assets in 1953 are slightly higher than a year ago and are expected to average slightly higher in 1954. Insurance premiums and assessments paid by farmers probably will be higher in 1954 than in 1953. The increased costs are due to increases in insurance carried rather than to increased rates charged.

As always, the real effects of changes in cost rates and in prices received by farmers for farm products will differ widely by type, size and location of farm. Net returns in 1953 on 6 selected types of farms in widely separated areas are lower than in 1952 on Corn Belt Hog-beef fattening farms, northeast and western Wisconsin dairy farms, southern Piedmont and Texas High Plains cotton farms, but higher on Northern Plains spring wheat farms.

Prices received on all 6 types of farms are generally lower in 1953 than a year ago. Production is about the same as a year ago on the dairy farms, lower for Corn Belt farms and the High Plains cotton farms but slightly higher for the Piedmont cotton farms and about 18 percent higher on the spring wheat farms. Assuming average yields, prospective returns for 1954 are lower than in 1953 on the dairy and Piedmont cotton farms but higher on the other three types of farms. The extent of the change varies widely among types and location of farms. Also, production conditions in 1953 were unfavorable in some areas. (See the last section of this report and Agr. Inf. Bul. No. 116, "Farm Costs and Returns, 1952 with Comparisons, 20 Types of Commercial Family-Operated Farms in 12 Major Farming Regions" for details.)

## Farm Labor

The supply of farm labor is expected to be adequate for high level farm production in 1954. But continued effective recruitment campaigns and emphasis on using labor efficiently will still be necessary. Farm wage rates in 1953 are expected to average less than

2 percent higher than the 1952 record high and 9 percent higher than in 1951 (table 1). They are expected to show little change in the next year in view of the outlook for farm income and farm labor supply.

A slackening off in the downward trend in farm employment points to some improvement in the supply of farm labor. For 52 consecutive months (November 1948 to February 1953) reported farm employment was less than in the corresponding month of the previous year. However, in 2 months since February farm employment was above the level of a year earlier. Average annual farm employment in 1953 is about the same as in 1952. The number of hired workers employed this year is averaging slightly greater than last year.

Although there may be a slight increase in the over-all supply of farm labor in the year ahead, the supply of experienced year-round workers is expected to continue tight. Nonfarm job opportunities will continue to lure some of these workers from farms. The induction and enlistment of farm workers in the armed forces will continue to create adjustment problems on some farms. Foreign and offshore domestic workers are expected to be available again for seasonal contract farm work.

Farm output per man-hour in 1953 is expected to be about 3 percent above 1952, and the highest on record (fig. 2). Further advances in farm technology and an increase in productivity of farm labor can be expected in 1954. This adds further assurance that lack of labor will not be a general limiting factor to farm production in the year ahead.

## Farm Power and Machinery

Prices of farm machinery and equipment, excluding automobiles and trucks, are about 14 percent higher in 1953 than in the first half of 1950 (just before the Korean war began), and about double the 1935-39 average. Prices in 1954 probably will differ little from current levels but price concessions and trade-in allowances may be more liberal. Prices paid by farmers for gasoline in 1953 are higher than for any previous year and about 40 percent above prewar prices (table 2). On the other hand, there were moderate declines in tire prices and in the estimated cost per head of keeping workstock in 1953.

Production of farm machinery in 1953 will average moderately below the 1952 output but larger than the production of any year before 1948. Lower net farm incomes and uncertainty on the part of farmers concerning future prospects for important crops have contributed to reduced purchases of farm machinery in 1953. With the incomes in prospect for 1954 it is likely that farmers' purchases of new machinery and equipment will be close to the 1953 volume.

Numbers of tractors and tractor machines and equipment on farms have been increasing at a rapid rate. Since 1940 tractor numbers have increased by 185 percent. It is estimated that on January 1, 1953, there were 4.4 million tractors on farms in the United States. Of these about 88 percent were of the wheel type, 4 percent crawlers, and 8 percent garden tractors.

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-53

(Index numbers, 1935-39 = 100)

| Period or year | Farm employment | | | Man-hours of farm work 2/ | Farm output 3/ | | Gross farm income per man-hour 4/ | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
| | Total 1/ | Family 1/ | Hired | | Total | Per man-hour | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 91 | 94 | 98 | 110 | 112 | 107 | 107 |
| 1941 | 89 | 88 | 93 | 97 | 114 | 118 | 136 | 125 |
| 1942 | 88 | 87 | 89 | 101 | 128 | 127 | 177 | 163 |
| 1943 | 87 | 88 | 85 | 100 | 125 | 125 | 220 | 217 |
| 1944 | 85 | 88 | 78 | 100 | 130 | 130 | 232 | 263 |
| 1945 | 84 | 87 | 74 | 95 | 129 | 136 | 257 | 297 |
| 1946 | 86 | 89 | 76 | 93 | 133 | 143 | 300 | 320 |
| 1947 | 87 | 89 | 79 | 91 | 128 | 141 | 360 | 346 |
| 1948 | 87 | 88 | 82 | 89 | 138 | 155 | 374 | 365 |
| 1949 | 83 | 85 | 79 | 89 | 137 | 154 | 344 | 354 |
| 1950 | 78 | 80 | 73 | 83 | 136 | 164 | 372 | 352 |
| 1951 | 75 | 77 | 69 | 86 | 139 | 162 | 414 | 388 |
| 1952 | 72 | 74 | 67 | 83 | 144 | 173 | 430 | 416 |
| 1953 6/ | 72 | 73 | 68 | 81 | 144 | 178 | 417 | 422 |

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1/ Includes farm operators and members of their families working without wages.

2/ Total man-hours of farm work in terms of the time required by average adult male workers.

3/ Net calendar-year production for eventual human use.

4/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1953.

5/ Simple average of quarterly indexes seasonally adjusted.

6/ Preliminary. Estimates of farm output and man-hours for 1953 based chiefly on August 1953 report of the Crop Reporting Board.

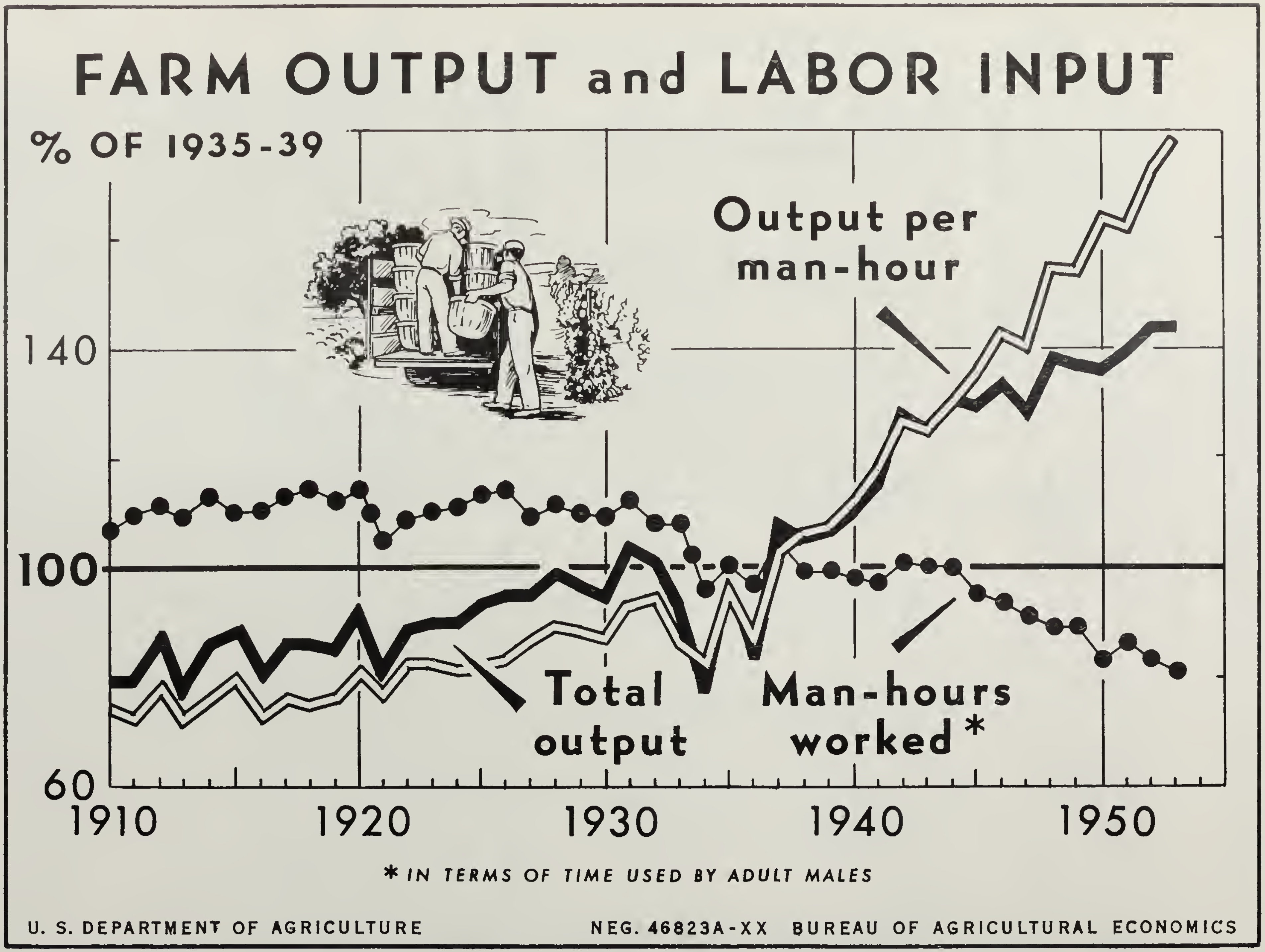
FARM OUTPUT and LABOR INPUT
% OF 1935-39
140
100
60
1910
1920
1930
1940
1950
Output per man-hour
Total output
Man-hours worked *
* IN TERMS OF TIME USED BY ADULT MALES
U. S. DEPARTMENT OF AGRICULTURE
NEG. 46823A-XX BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 2

Although numbers of farm machines have continued to increase, farmers' purchases of new machines and equipment have declined since the record levels of 1951. Numbers of important farm machines such as tractors, combines, corn pickers, and milking machines will continue to increase in the years ahead, but an increased proportion of the machines bought by farmers will be for replacement and the rate of increase in numbers of machines on farms will be less.

The total volume of power, machinery, and equipment on farms January 1, 1953 was about 88 percent above the average of 1935-39. Purchases of tractors and farm machinery in 1953 were sufficiently large to increase further the total volume of machinery and power on farms in 1954.

Machinery operating expenses and depreciation have increased considerably in recent years. On 160-acre hog-dairy farms in northeastern Iowa the total of these two items increased from about $500 a year in the 1930's to nearly $2,000 in 1953 (fig. 3).

Numbers of motortrucks on farms continue to increase. Approximately 2.5 million motortrucks were on farms January 1, 1953. This is about 140 percent above the 1940 number. Numbers of automobiles on farms have increased by less than 10 percent since 1940.

During the 13 years (January 1, 1940 to January 1, 1953) numbers of horses and mules on farms in the United States declined by about 8.8 million head. In recent years the reduction in horse and mule numbers has averaged about 10 percent per year. Prices of work animals are at low levels and substantially below prewar prices.

## Feed

Prices of feeds in September generally were about 8 percent below those of 6 months ago, and nearly 13 percent lower than a year ago. Corn, oats, dairy feed, laying mash, and linseed meal were 10 to 15 percent lower than a year ago. Other feed grains and other high protein feeds were reduced still more (table 3). Hay was also 10 to 15 percent lower in price. Over the next 6 months feed costs in the country as a whole may average 5 to 10 percent lower than a year earlier.

Total supplies of feed grains and other concentrates for the 1953-54 season probably will be a little larger than a year ago because of the large carry-over of corn. The corn and oats crops in 1953 are a little smaller than in 1952. The number of animals to be fed is a little smaller and the supply of feed concentrates per animal unit about 4 percent larger than a year ago (table 4). The carry-over of feed grains probably will be a little larger a year hence than the 28 million tons this fall. Supplies of high protein and other byproduct feeds are not much different than a year ago.

It seems probable that less feed grains and concentrates will be fed to cattle and hogs in 1953-54 than a year ago, but more will be fed

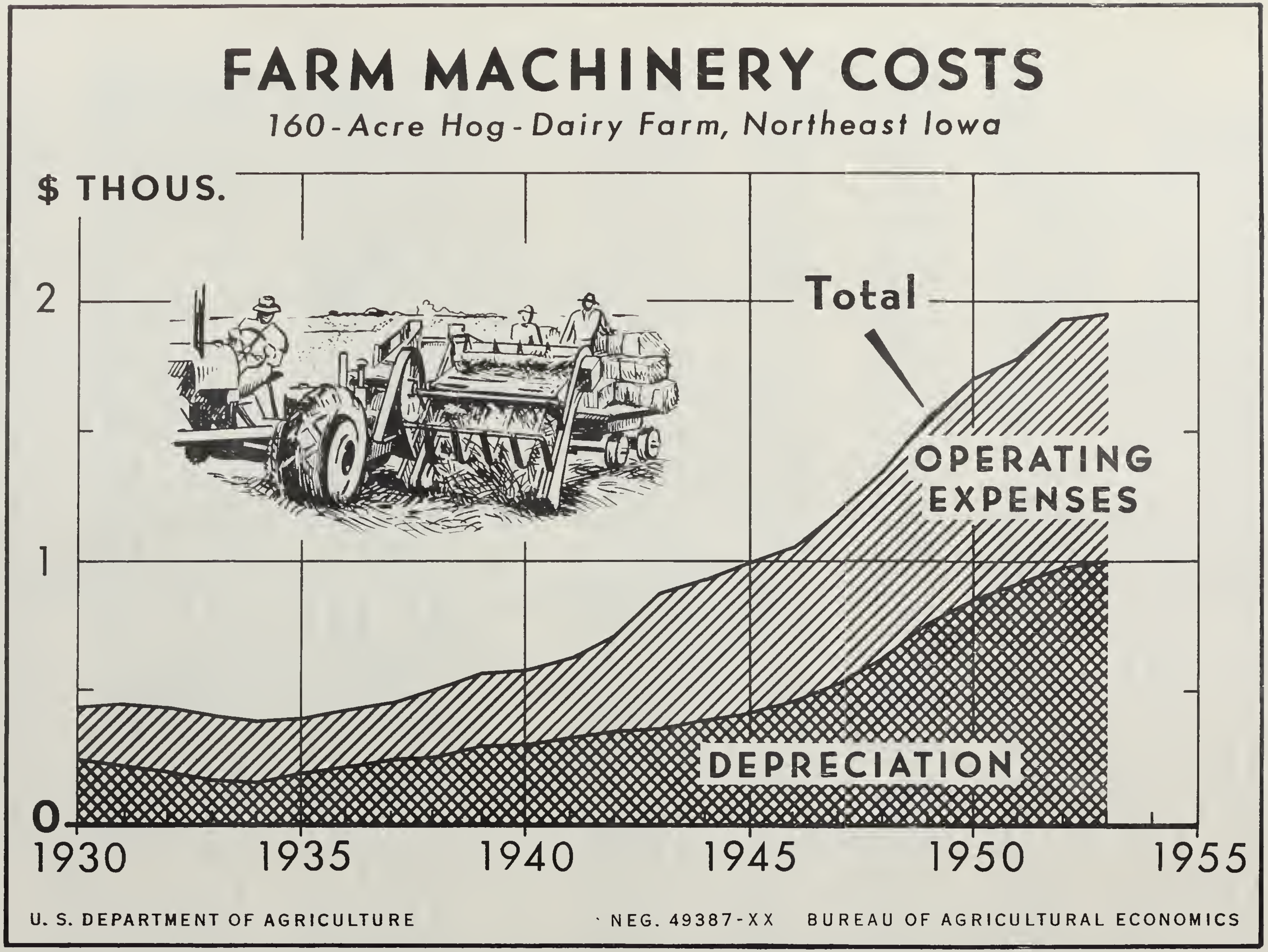
FARM MACHINERY COSTS
160-Acre Hog-Dairy Farm, Northeast Iowa
$ THOUS.
2
1
0
Total
OPERATING EXPENSES
DEPRECIATION
1930
1935
1940
1945
1950
1955
U. S. DEPARTMENT OF AGRICULTURE
NEG. 49387-XX
BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 3

Table 2.- Horses and mules and tractors on farms and cost of keeping horses and mules and of using farm tractors, United States, 1935-39 average and 1940-53 1/

(Index numbers 1935-39 = 100)

| Calendar year or period | Tractors on farms, January 1 | Horses and mules on farms, all ages January 1 | Colts under 1 year on farms, January 1 | Horses and mules all ages, value per head January 1 | Feed cost per head 2/ | Prices paid by farmers for: New tractors 3/ | Prices paid by farmers for: Gasoline | Prices paid by farmers for: Tires 6.00 x 16 |
|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 124 | 92 | 101 | 90 | 93 | 96 | 95 | 92 |
| 1941 | 135 | 90 | 98 | 81 | 101 | 101 | 99 | 95 |
| 1942 | 152 | 87 | 85 | 78 | 126 | 102 | 103 | 117 |
| 1943 | 169 | 84 | 69 | 95 | 164 | 99 | 103 | 130 |
| 1944 | 178 | 80 | 62 | 98 | 188 | 111 | 103 | 136 |
| 1945 | 195 | 76 | 54 | 86 | 186 | 113 | 103 | 131 |
| 1946 | 206 | 71 | 42 | 80 | 207 | 126 | 106 | 133 |
| 1947 | 220 | 64 | 35 | 84 | 249 | 142 | 118 | 127 |
| 1948 | 240 | 59 | 31 | 79 | 261 | 158 | 131 | 128 |
| 1949 | 266 | 54 | 28 | 72 | 204 | 174 | 134 | 124 |
| 1950 | 290 | 49 | 23 | 63 | 212 | 175 | 135 | 139 |
| 1951 | 317 | 45 | 19 | 56 | 240 | 188 | 136 | 165 |
| 1952 | 335 | 40 | 16 | 55 | 251 | 188 | 138 | 159 |
| 1953 | 4/ 354 | 36 | 15 | 54 | 5/ 229 | 6/ 188 | 6/ 140 | 6/ 155 |

---

1/ The 1935-39 averages were: Horses and mules all ages, 15,750,000 head; value per head, $97.65; feed cost per head, $44.40; colts under one year of age 744,000 head; tractors, 1,244,000; prices paid by farmers for new tractors, $1,060; gasoline $0.19; and tires, $12.60.

2/ Based on 25 bushels each of oats and corn and 2 tons of baled hay.

3/ Tractor prices are for medium size (20-29 BHP) wheel tractor equipped with rubber tires.

4/ Preliminary estimates.

5/ Average of the first 8 months.

6/ Average prices paid in March and June.

Table 3.- Average prices of feeds in the United States, September 15, 1953 with comparisons

| Item | Unit | Sept. 15, 1951 | Sept. 15, 1952 | Mar. 15, 1953 | Sept. 15, 1953 |
|---|---|---|---|---|---|
| Prices received by farmers | | | | | |
| Corn | Bushel | $ 1.65 | $ 1.71 | $ 1.46 | $ 1.50 |
| Oats | do. | .78 | .84 | .78 | .71 |
| Barley | do. | 1.17 | 1.43 | 1.32 | 1.12 |
| Sorghum grain | Cwt. | 2.12 | 3.02 | 2.66 | 2.26 |
| Hay, baled | Ton | 21.30 | 25.00 | 24.40 | 20.90 |
| Feed grains and hay, Index number (1935-39 = 100) | | 227 | 246 | 219 | 211 |
| Prices paid by farmers | | | | | |
| Mixed dairy feed 16% | Cwt. | 4.07 | 4.37 | 4.18 | 3.90 |
| Laying mash | do. | 4.94 | 5.35 | 5.00 | 4.80 |
| Broiler mash | do. | -- | -- | 5.34 | 5.22 |
| Cottonseed meal | do. | 4.40 | 5.33 | 4.95 | 3.72 |
| Soybean meal | do. | 4.77 | 6.08 | 4.91 | 4.60 |
| Linseed meal | do. | 4.42 | 5.43 | 5.27 | 4.60 |
| Meat scrap | do. | 6.29 | 6.73 | 5.48 | 5.37 |
| Bran | do. | 3.58 | 3.77 | 3.62 | 3.11 |
| Middlings | do. | 3.76 | 3.96 | 3.66 | 3.26 |
| Alfalfa hay, baled | Ton | 33.20 | 37.60 | 38.50 | 33.60 |
| Prices paid by farmers for feed, Index number (1935-39 = 100) | | 223 | 242 | 227 | 210 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | | |
| Fed to poultry | Cwt. | 3.99 | 4.28 | 3.97 | 3.82 |
| Fed to milk cows in milk selling areas | Cwt. | 3.62 | 3.88 | 3.68 | 3.40 |
| Fed to milk cows in cream selling areas | Cwt. | 3.26 | 3.40 | 3.25 | 2.99 |

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1/ Value of the corn, oats, oil meal, millfeed, commercial mixed feed, etc., making up 100 pounds of "grain" ration.

Table 4.- Feed concentrate supply and utilization and livestock fed, United States, 1937 to 1953 1/

| Year beginning October | Supply | | | | Utilization | | Stocks of feed grains end of year 2/ | Animal units grain-consuming livestock fed annually | Production feed grains per animal unit | Supply concentrates per animal unit | Concentrates fed per animal unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stocks feed grains beginning of year | Production feed grains | Wheat, rye and by-products feeds fed | Total | Seed, feed, industry and exports of feed grains | Concentrates fed to livestock | | | | | |
| | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million units | Tons | Tons | Tons |
| Av. 1937-41 | 16.9 | 99.3 | 19.9 | 136.1 | 12.1 | 104.9 | 19.9 | 153.1 | .65 | .89 | .69 |
| Av. 1942-46 | 14.7 | 117.3 | 29.4 | 161.4 | 14.8 | 133.0 | 15.5 | 177.5 | .66 | .91 | .75 |
| 1947 | 13.8 | 94.1 | 24.7 | 132.6 | 13.6 | 110.4 | 7.8 | 154.0 | .61 | .86 | .72 |
| 1948 | 7.8 | 135.4 | 23.5 | 166.7 | 17.6 | 120.1 | 30.4 | 160.1 | .85 | 1.04 | .75 |
| 1949 | 30.4 | 120.6 | 25.2 | 176.2 | 17.2 | 127.3 | 30.6 | 166.1 | .73 | 1.06 | .77 |
| 1950 | 30.6 | 122.0 | 25.9 | 178.5 | 20.4 | 129.8 | 28.7 | 172.3 | .71 | 1.04 | .75 |
| 1951 | 28.7 | 112.9 | 26.9 | 168.5 | 17.2 | 131.5 | 20.2 | 174.1 | .65 | .97 | .76 |
| 1952 | 20.2 | 120.7 | 27.9 | 168.8 | 16.8 | 124.0 | 28.0 | 169.6 | .71 | 1.00 | .73 |
| 1953 3/ | 28.0 | 118.4 | 26.8 | 173.2 | 17.0 | 125.2 | 31.0 | 167.0 | .71 | 1.04 | .75 |

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1/ From Feed Statistics, page 2, January 1953, BAE, and Feed Situation, September 1952, Table 2.

2/ Stocks do not necessarily exactly equal supply less feed and other utilization because of a difference in the crop year for different feed grains.

3/ Preliminary.

to poultry and milk cows. There probably will be about 3 percent more feed grains and other concentrates per unit of grain consuming livestock for the year ahead than for 1952-53.

The hay supply for 1953-54 is about the same as a year earlier with about the same number of hay consuming livestock. Hay production in 1953 was about 10 percent or more below average in Missouri, Mississippi, and Arkansas. It was above average in about half the States. Poor pasture feed conditions in some areas in late summer and fall will increase the cost of carrying livestock through this winter.

In September, returns per $1.00 of feed fed to hogs were 19 percent above the 1937-51 average and far above those for other livestock enterprises (table 5). Returns from eggs and broilers were close to average. Returns from beef cattle, sheep, and butterfat dairying were lower than a year ago and the lowest among the different enterprises shown for September. Returns from cattle feeding in 1952-53 were probably the lowest in over 30 years as net returns in the typical feeding operation were far short of enough to pay for the feed at market prices. However, returns from cattle feeding fluctuate more from year to year than from any other livestock enterprise and in some years are 50 percent above average.

## Seeds

Lower prices are being paid by farmers this fall than last spring for most of the legume and grass seeds. Notable exceptions, however, are Kentucky Bluegrass and redtop, prices of which are currently the highest on record. Greatest declines from last spring's prices are shown for crested wheatgrass, seed rye, and Ladino clover.

Compared with last fall, current retail prices are higher for Kentucky Bluegrass, redtop, common ryegrass, and Wild Winter peas, but lower for all the other 24 seeds in the fall to fall comparisons. Sharpest declines from a year ago are shown for tall fescue, all alfalfas, Ladino clover, reseeding varieties of crimson clover, and alsike clover.

The total supply (production plus carry-over) of 23 legume, grass and winter cover crop seeds for which production forecasts have been made is 29 percent below that of last year, but 5 percent above the 1942-51 average. Current supplies of clover-seeds, excluding crimson clover which is classed as a winter cover crop seed, are 6 percent smaller this year than last but are 31 percent above the 10-year average. Supplies of grass seeds, except ryegrasses, included in the winter cover crop group are 14 percent smaller than in 1952 and 8 percent below average. The winter cover crop seed supply is 41 percent smaller this year than last but only 1 percent below the 1942-51 average.

Kinds of seeds in shortest supply, ranging from a fifth to a half of average, are redtop, crested wheatgrass, Kentucky Bluegrass, and timothy. On the other hand, supplies of tall fescue, Ladino clover, hairy vetch, crimson clover, and orchardgrass are much above average.

Table 5.- Returns per $1.00 of feed cost of livestock enterprises, United States, Sept. 15, 1953, with comparisons 1/

| Livestock enterprise or product | 1937-51 average Sept. | Sept. 15, 1951 | Sept. 15, 1952 | March 15, 1953 | Sept. 15, 1953 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.91 | 1.97 | 1.62 | 1.61 | 1.93 |
| Broilers | 2/ 1.64 | - | - | 1.62 | 1.61 |
| Milk | 2.17 | 2.08 | 2.00 | 1.81 | 2.03 |
| Butterfat | 1.71 | 1.56 | 1.52 | 1.37 | 1.45 |
| Hogs | 1.65 | 1.49 | 1.50 | 1.69 | 1.96 |
| Sheep | 1.70 | 2.05 | 1.44 | 1.33 | 1.39 |
| Beef | 1.83 | 2.58 | 1.92 | 1.52 | 1.47 |
| Cattle | | 1951-52 | | 1952-53 | |
| feeding | 3/ 1.25 | 1.33 | | .72 | |
| | (Index numbers 1937-51 = 100) | | | | |
| | Percent | Percent | Percent | Percent 4/ | Percent |
| Eggs | 100 | 103 | 85 | 107 | 101 |
| Broilers | 100 | - | - | 99 | 98 |
| Milk | 100 | 96 | 92 | 94 | 94 |
| Butterfat | 100 | 91 | 89 | 90 | 85 |
| Hogs | 100 | 90 | 91 | 101 | 119 |
| Sheep | 100 | 121 | 85 | 83 | 82 |
| Beef | 100 | 141 | 105 | 86 | 80 |
| Cattle | | 1951-52 | | 1952-53 | |
| feeding | 100 | 106 | | 58 | |

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1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of chick starter per pound of broiler in 1935-39. In 1951 and 1952, 3½ pounds of chick starter and in 1953, 3¼ pounds of broiler mash. No prices available on broiler mash before 1953. 7½ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lambs. It was assumed that for each 100 pounds of sheep and lamb produced 20 pounds of wool were produced from the same feed. The quantity of hay for milk cows, beef cattle and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost 1/4 as much per pound as they would if obtained from hay. Cattle feeding returns are based on table 3, Livestock and Meat Situation, Aug.-Sept., 1953. It is designed to represent average feeding experience in the Corn Belt.

2/ Average for March. 3/ 1920-52 average. 4/ The index numbers for March are calculated from averages for March.

Between now and next spring sharp changes are not expected in prices farmers have to pay for most seeds. Some exceptions to this general statement will be noted. Retail prices of Kentucky Bluegrass and redtop are already at record high levels, and probably will advance because of the short supplies. Although the supply of timothy seed in the United States is currently only about half the average, prices are likely to be held down because of the large surplus in Canada. Current supplies of tall fescue and Ladino clover are so large that retail prices are more likely to decline than advance during the next 5 or 6 months. Price of common ryegrass, now above that of a year ago, may be expected to advance further because more of this seed will be used in lawnseed mixtures than ever before.

It is difficult to appraise the prospective changes in retail prices for alfalfa, red clover, Sudangrass, and lespedeza seed until 1953 production and farm carry-over figures are available. This much, however, may be noted. Dealer and Government carry-overs of alfalfa and red clover are much above average, while dealer carry-over of lespedeza seed is somewhat above average, and that for Sudangrass seed much below average.

Based on supply and price data currently available, it would seem prudent for the farmer to cover his requirements for seeds in short supply, such as Kentucky Bluegrass and redtop, as soon as possible but to postpone purchases of seeds in large supply, such as Ladino clover and tall fescue. In the cases of seeds for which supplies appear adequate it is well to keep in mind that while little may be gained pricewise by buying early, one is more likely to get seed of better quality by buying early.

## Fertilizer

Prices of fertilizers during the 1952-53 season averaged about 2 percent higher than in 1951-52. On the whole little change from present price levels is expected during the coming year. However, prices may be lower for some specified kinds.

The available supply of major plant nutrients in fertilizer reached a new high during the year ended June 30, 1953. In the main, the larger supply went into consumption channels. The carry-over of certain types of material was somewhat higher than a year earlier but is not of burdensome proportions.

The aggregate supply of the three major plant nutrients for the 1953-54 season probably will exceed the record output of 1952-53 by around 13 percent. This preliminary estimate is based on current information as to completion of new production facilities, and assumes import-export relationships at above current levels.

Nitrogen (N): The supply of nitrogen available for fertilizer purposes in 1953-54 is currently estimated at slightly over two million tons. This is approximately 11 percent above the reported 1952-53 supply of 1.8 million tons.

The supply of solid nitrogen materials (dry nitrogen) available for 1953-54 represents approximately 60 percent of the total supply. Solutions and liquid materials (wet nitrogen including anhydrous ammonia) make up 40 percent. For the previous year these percentages, based on trade deliveries, were approximately 62 and 38.

Phosphate ($P_2O_5$): The available supply of phosphatic material, $P_2O_5$ basis, for the 1953-54 season may exceed the 2,410,000 tons available in 1952-53 by as much as 12 percent. This assumes that sulfuric acid will continue in plentiful supply and that plants expected to be in production for the 1953-54 season will be completed as scheduled.

The new plant capacity scheduled for completion in 1953 involves a sizeable tonnage of concentrated superphosphate, which should increase the supply of this material in relation to the total quantity of $P_2O_5$ available in 1953-54.

Potash ($K_2O$): The 1953-54 supply of potash available for fertilizer purposes will reflect production from new facilities as well as increases from older operating units. Taking into consideration the possible increase in domestic production, and assuming approximately the same import-export balance as in 1952-53, it is estimated that the 1953-54 supply will exceed the 1,735 thousand tons available in 1952-53 by as much as 15 percent.

Profitable use of fertilizer: Unlike fixed expenditures such as taxes, interest and necessary repairs and replacements, expenditures by individual farmers for fertilizer and some other production goods can be varied considerably from year to year. When the price-cost ratio declines farmers have to make careful decisions as to expenditures for fertilizer and other variable cost items used in production. Usually these decisions have to be made when the outcome is uncertain. Where farmers know how much response can be expected from different rates of application of fertilizer under reasonably good weather conditions, estimates of the probable return per acre under specified price conditions can be made. The cost of fertilizer is known at the time of application. Therefore, the two major uncertainties in the use of fertilizers are weather and prices for the crop.

When prices decline farmers are likely to reduce fertilizer application more than would be profitable. As a result, the smaller fertilizer application reduces yields and consequently crop values per acre more than the saving in the cost of the fertilizer. Farmers generally have not been applying as much fertilizer as would be most profitable under most conditions of weather and prices. In those relatively few cases where farmers have been applying fertilizer at the most profitable rate (mostly among tobacco, potato, and vegetable producers) a decline in prices would indicate that some reduction in the rate of application of fertilizer would be desirable. However, even in these cases, unless the price declines are large, experimental evidence indicates that it is not profitable to make sharp reductions in fertilizer application. (An illustration of the effects of different prices for corn on the most profitable rate of fertilizer application in the Corn Belt on soils of somewhat below average fertility is shown in table 6).

Table 6.- Illustration of effect on returns per acre of applying different amounts of plant nutrients to corn, with corn prices at two levels and cost of fertilizer at 1953 levels 1/

| Rate of application | Application of plant nutrients per acre | | | Return per acre above cost of fertilizer | |
|---|---|---|---|---|---|
| | N | $P_2O_5$ | $K_2O$ | Corn at $1.25 per bu. 2/ | Corn at 90¢ per bu. 2/ |
| | Pounds | Pounds | Pounds | Dollars | Dollars |
| Estimated current 3/ | 20 | 30 | 30 | 69 | 47 |
| Most profitable rate with corn at $0.90 per bu. | 105 | 100 | 60 | 94 | 64 |
| Most profitable rate with corn at $1.25 per bu. | 130 | 120 | 75 | 102 | 63 |
| Most profitable rate with corn at $1.75 per bu. | 150 | 140 | 90 | 101 | 61 |

1/ On soils of somewhat below average fertility in the Corn Belt.

2/ Illustrative prices. These are net farm prices after deducting all harvesting and marketing costs.

3/ Estimated current application rate on corn in one selected cash-grain area.

## Building Materials and Farm Supplies

Prices of farm building materials have changed very little during the past 2 years. They increased about 12 percent at the outset of the Korean War but since March 1951 they have not changed appreciably. They are now about two and two-thirds times as high as in 1940.

Changes in the cost of building materials commonly used in the construction of poultry houses are shown in figure 4. In 1940 the materials required to build a 16'x48' wooden structure with a concrete floor and composition roof and large enough to accommodate about 200 layers would have cost about $300 or $1.50 per bird housed. The present cost of the same materials is about $800 or $4.00 per bird housed. However, the price received for eggs also has increased over the years. It required about as many eggs in 1953 as in 1940 to pay for materials in this poultry house. Prices received for eggs in 1952

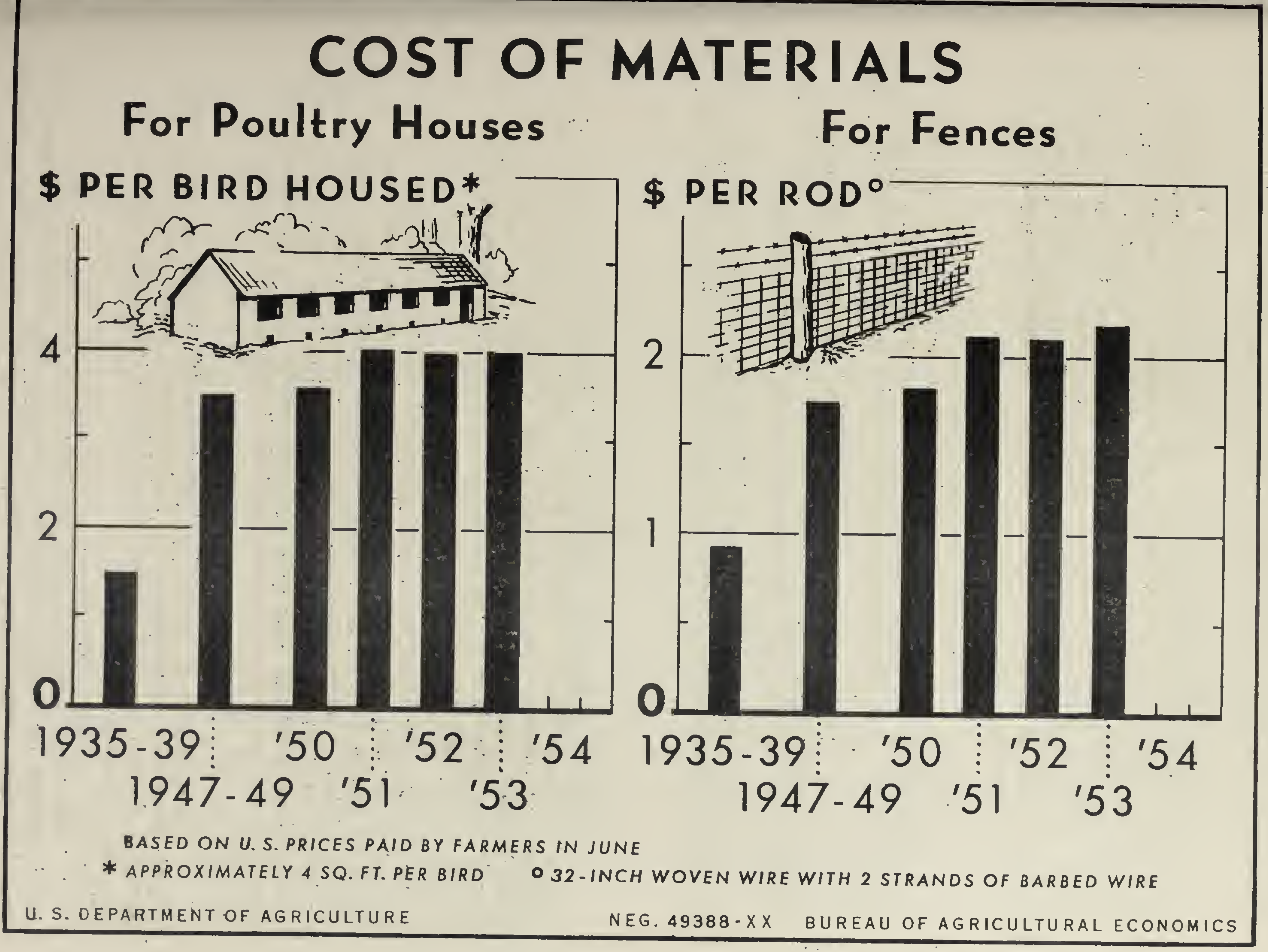
COST OF MATERIALS
For Poultry Houses
$ PER BIRD HOUSED*
4
2
0
1935-39
1947-49
'50
'51
'52
'53
'54
For Fences
$ PER ROD°
2
1
0
1935-39
1947-49
'50
'51
'52
'53
'54
BASED ON U. S. PRICES PAID BY FARMERS IN JUNE
* APPROXIMATELY 4 SQ. FT. PER BIRD
° 32-INCH WOVEN WIRE WITH 2 STRANDS OF BARBED WIRE
U. S. DEPARTMENT OF AGRICULTURE
NEG. 49388-XX
BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 4

were relatively lower, however, and it required about 13 percent more eggs in 1952 than in 1953 to pay for these materials.

The cost of fencing materials has not gone up quite as much as the cost of farm building materials. In 1940, $300 would buy enough materials to build a mile of fence; now it takes $700 worth of materials. The fence consists of 32-inch woven wire and two strands of 4-point barbed wire strung on alternate wood and steel posts set one rod apart. It also has two galvanized 14-foot gates. The cost of these materials increased from $2.10 per rod in June 1952 to $2.18 per rod in June 1953 (fig. 4). All of this increase of nearly 4 percent took place between June and September 1952.

Prices paid by farmers for miscellaneous farm supplies were about 1 percent lower in June than a year earlier but still about 20 percent higher than in 1947-49. Wooden and metal containers are higher now than a year ago but burlap bags and binder twine are somewhat cheaper.

Prices of building materials, supplies and containers probably will not be any higher in 1954 than they are now, and there is some possibility of slightly lower prices and more price concessions.

Supplies of these items were adequate to meet needs in 1953, and there are no indications at present that there will be shortages in 1954.

## Pesticides

Stocks of pesticides (insecticides, fungicides and weed killers) held by manufacturers and dealers at the end of the 1953 season are considerably smaller than the large inventories of a year ago. However, present inventories are about what the trade considers normal. Much of the reduction is due to smaller stocks of DDT, benzene hexachloride, and similar insecticides.

Large quantities of insecticides were used on cotton in 1953 to control a variety of insects. The amount consumed may have been as large or larger than in the record season of 1951. Considerable quantities of insecticides were used also for control of army worms; much of it in the Midwest. Consumption of fungicides, particularly copper sulfate, was lower in 1953 than in other recent years. Some increase over 1952 in the use of the weed killers 2,4-D and 2,4,5-T has been reported.

The quantity of pesticides manufactured in 1953 was lower than a year earlier. Production of DDT and benzene hexachloride was markedly lower, and that of toxaphene, aldrin and copper sulfate slightly lower than in 1952.

Capacity of the chemical industry to produce pesticides is more than adequate to supply anticipated needs for the immediate future. Some factories were expanded to take care of anticipated foreign demand for pesticidal materials. However, exports have not developed as rapidly as expected.

Manufacturers' prices of many pesticides have continued the decline begun more than a year ago. In mid-September 1953, prices of benzene hexachloride and DDT were about 50 percent and 30 percent, respectively below prices of a year earlier and about 25 percent and 6 percent below those of 6 months earlier. Prices of aldrin also were considerably below those of 6 months and a year ago. Prices of sulfur and nicotine sulfate, however, were about 10 to 12 percent higher than last spring or a year ago. Prices of most other pesticides in mid-September were somewhat lower than a year ago but unchanged from those last spring. These changes in manufacturers' prices have been reflected generally in prices paid by farmers for pesticides.

## Farm Land Values and Rentals

Farm real estate values have shown a gradual downward trend since November 1952, as prices received for livestock and other major agricultural products have declined. The declines in most States have not been large. In July land values for the country as a whole averaged 2 percent below last March and 4 percent below a year earlier. Largest declines during the year occurred in the Southwest, where dry weather prevailed, and in the Mountain States where farm income was affected the most by the sharp drop in cattle prices during the fall and winter of 1952-53. Despite these declines in land values, the national index for July was 24 percent above the 1947-49 average (table 7).

Table 7.- Farm Real Estate: Index numbers of average value per acre and percentage change 1/

| Geographic division | Index numbers (1947-49=100) | | | | Change during year ending | | Change during 4 months ending | |
|---|---|---|---|---|---|---|---|---|
| | 1951 | 1952 | 1953 | | July | July | July | July |
| | | | March | July | 1952 | 1953 | 1952 | 1953 |
| | | | | | Percent | Percent | Percent | Percent |
| New England | 103 | 106 | 108 | 108 | 3 | 0 | 2 | 0 |
| Middle Atlantic | 113 | 125 | 125 | 124 | 6 | -2 | 1 | -1 |
| E. North Central | 121 | 132 | 133 | 131 | 7 | -2 | 2 | -2 |
| W. North Central | 123 | 135 | 133 | 130 | 5 | -4 | 0 | -2 |
| South Atlantic | 112 | 125 | 129 | 128 | 8 | 1 | 2 | -1 |
| E. South Central | 116 | 127 | 128 | 126 | 6 | -2 | 2 | -2 |
| W. South Central | 121 | 137 | 128 | 126 | 9 | -9 | 1 | -2 |
| Mountain | 109 | 115 | 112 | 110 | 1 | -7 | 3 | -1 |
| Pacific | 95 | 99 | 97 | 96 | 0 | -3 | 0 | -1 |
| United States | 117 | 128 | 126 | 124 | 6 | -4 | 1 | -2 |

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1/ Revised series. All farm land with improvements as of March 1 except as indicated.

With cash receipts from farm marketings during the first 8 months of 1953 about 4 percent below the same period a year earlier, farm real estate values are likely to continue the moderate rate of decline of recent months. No serious break in the farm real estate market is expected. As in the past, values in some regions will reflect current and prospective cost-price relationships to a greater extent than in others.

Gross rents paid for leased lands in 1953 probably will be a little less than in 1952. Cash rental rates for farms and for hay and pasture on share-rented farms are up slightly from the previous year. However, share rental rates for both crop and livestock will be down because of lower prices. Total gross rents for 1953 are tentatively estimated at $3,359 million, about 3 percent less than in 1952.

Total expenses paid by landlords in 1953 probably will be about the same or a little higher than in 1952. Landlord's expenses for real estate taxes and building depreciation are expected to average higher in 1953 but their expenses for feed and seed will be lower. Net rents in 1953 may be down 4 to 5 percent from 1952. As the value of farm real estate has declined about the same amount, the rate of return on investment when valued at current prices will be about the same as in 1952. For more detail on land values and rentals see "The Farm Real Estate Market" July, 1953.

## Interest, Taxes, and Insurance

Interest payments - Total farm-mortgage debt on January 1, 1954 is expected to be about 9 percent higher than the 7.1 billion outstanding a year earlier. The average rate of interest on January 1, 1953 was 4.7 percent as compared with 4.6 percent on the same date in 1952. Total interest charges paid on farm-mortgage debt in 1953 probably will be about 9 percent higher than in 1952.

Interest charges on farm-mortgage debt in 1954 probably will be 8 percent higher than in 1953. Further increases in farm-mortgage debt are expected although possibly at a somewhat slower rate than in 1953. Increases in interest rates on new farm-mortgage loans are reported this year but interest rates in 1954 probably will remain near 1953 levels.

The 1953 interest charges on non-real-estate debt of farmers, excluding loans made or guaranteed by the Commodity Credit Corporation, are expected to be about 5 percent lower in 1953 than in 1952 because of a reduction in this type of debt. Interest charges have decreased the most in the Midwest and Mountain regions where less debt has been incurred for financing livestock. In many sections of the Northeast and South, however, the use of non-real-estate credit increased moderately in 1953 because of higher cash outlays and a further rise in production costs. This will result in higher interest charges for these areas. Interest rates in some localities have risen slightly but their effect on charges has been relatively small.

Some further drop in interest charges on non-real-estate debt can be expected for 1954 for the United States as a whole. The amount of new credit used by farmers probably will decline although the effect of this on total credit outstanding may be offset in part by a slowing up in repayments. Interest rates may increase slightly in a few areas during the next year.

Farm taxes - Farmers in nearly all States continue to pay higher taxes on their property. Taxes levied on farm real estate in 1952 (payable largely in 1953) were 5 percent higher than those of the previous year, and taxes levied on personal property were 9 percent higher. The prospect for 1953 levies (payable largely in 1954) is for an increase of about 3 percent in the farmers' real estate taxes and a decline in the personal property taxes. The net result probably will be that farmers will pay about 2 percent more property taxes in 1954 than in 1953.

Federal income tax payments of farmers on 1953 income are expected to be down somewhat from the preceding year. The decrease reflects lower farm incomes, as Federal income tax rates have remained unchanged. A somewhat greater decline is expected for payments on 1954 incomes partly because of a possible decline in taxable income and because a reduction in Federal income tax rates is scheduled for 1954. The lower farm income in 1953 also will reduce farmers' income tax payments to State governments.

Insurance - Premiums and assessments paid by farmers to farm mutual insurance companies probably will be higher in 1954 than in 1953. The increased insurance costs of farmers are due to increases in insurance carried, rather than to increases in rates charged. The assessment rates paid by farmers to farm mutual fire insurance companies averaged about 26.1 cents per $100 of insurance in 1952, compared with 26.7 cents in 1951.

Part of the assessment income of a farm mutual is usually put into its safety fund (reserve) in the years of below-average losses, for use in the years of heavy losses.

In recent years, the safety funds of farmer mutual fire insurance companies have increased at a faster rate than has their insurance. This means that farmers' assessment rates are being increasingly stabilized, thus reducing the chances that extra or larger assessments will be necessary in order to pay unusually heavy losses in any year. The safety funds of farmers' mutual fire insurance companies amounted to 52.5 cents per $100 of insurance in force at the end of 1952, compared with 51.6 cents at the end of 1951. For more detail on interest, taxes and insurance see "Agricultural Finance Review", Outlook Supplement October 1953.

## Costs and Returns on Selected Types of Farms

Changes in quantities and prices of items used in production and output per farm have different effects on costs of production and on net incomes of different types of farms (fig. 5). The following information illustrates changes in costs and returns on 6 important types of farms in widely separated areas. These are commercial family-operated farms of specified types, and therefore are not necessarily representative of all farms in the areas in which these farms are located. The estimates of incomes and expenditures for 1953 and 1954 for these 6 types of farms are based on the projected changes in prices and costs as indicated in the earlier sections of this report. The information presented illustrates the net effects of these changes on these 6 types of farms.

### Dairy Farms - Northeast

Net farm incomes on dairy farms in the Northeast will be about 25 percent lower in 1953 than in 1952, and the lowest since 1944. Slightly lower returns are expected in 1954.

These dairy farms are highly specialized and, consequently, net farm incomes are closely correlated with returns from the dairy enterprise. The price received for milk is the most important factor affecting the net returns from the dairy enterprise. Because much of the feed is bought on these farms the next most important factor is the prices paid for feed. In 1953, milk prices were about 10 percent lower than in 1952, and dairy feed prices were about 11 percent lower. A 1-percent decrease in the price of milk has about the same effect on net returns from the dairy enterprise on these farms as a 3-percent decrease in the price of feed. Therefore, if these farmers were to obtain the same dairy income in 1953 as in 1952 with milk prices 10 percent lower, prices paid for feed would have to be more than 30 percent lower, with no change in other costs.

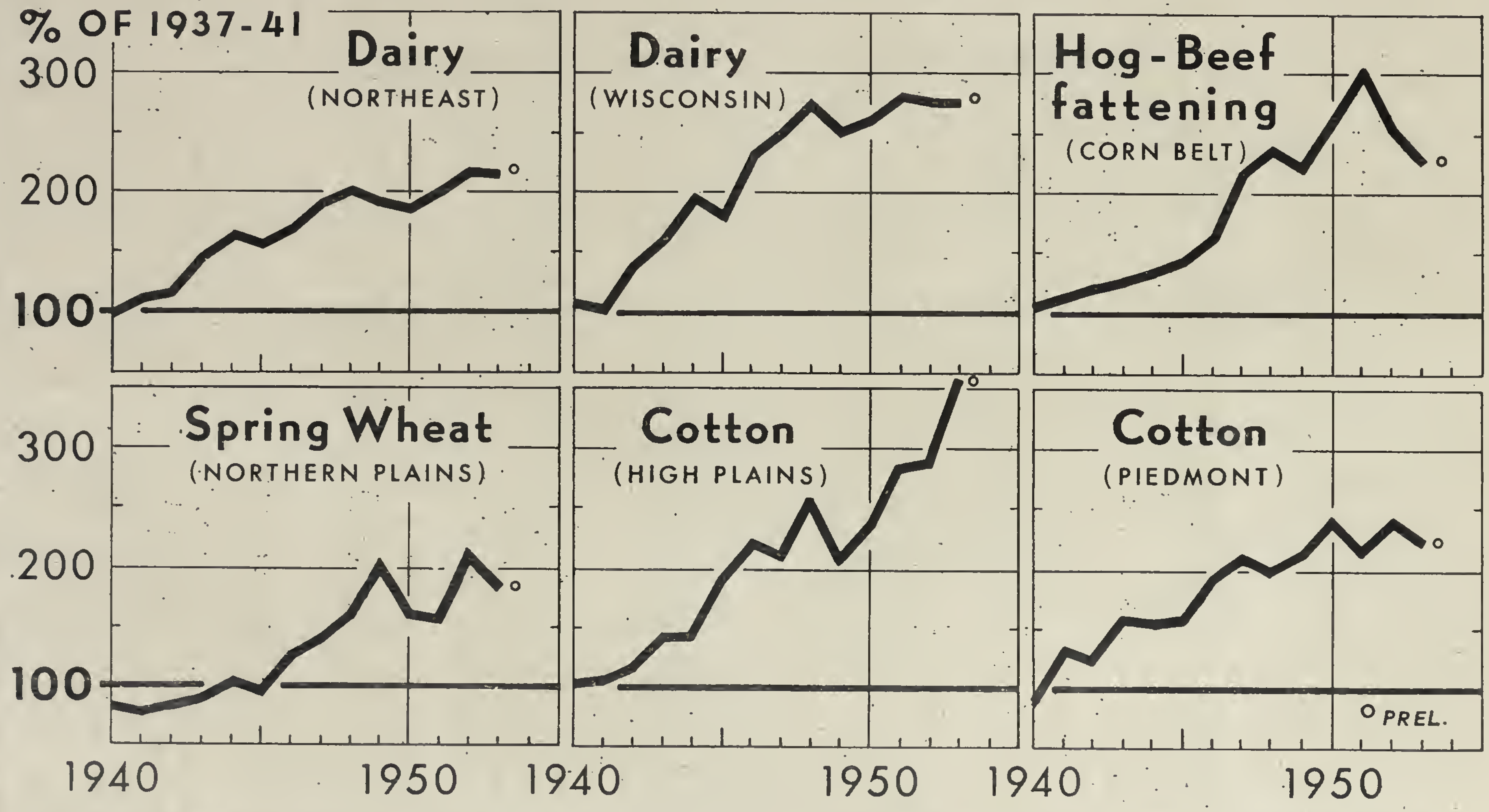
In addition to lower prices for milk, prices received for discarded dairy cows in 1953 were about 33 percent lower than in 1952.

### Dairy Farms - Western Wisconsin

Net farm incomes on dairy farms in western Wisconsin that sell whole milk will be about 15 percent lower in 1953 than in 1952. Somewhat higher returns from hogs and poultry are not sufficient to offset the lower returns from the dairy enterprise. The price of milk in this area is down about 10 percent from 1952 and the price of discarded dairy cows is down about 28 percent. Crop yields are only slightly lower than the high level of 1952. The outlook for 1954 is for slightly lower net returns on these farms if crop yields are about normal and if milk prices are somewhat lower.

*Six Major Types of Farms*

## FARM OPERATING EXPENSES PER UNIT OF PRODUCTION*



* INCLUDES ALL PRODUCTION COSTS EXCEPT INTEREST ON INVESTMENT AND A CHARGE FOR OPERATOR AND FAMILY LABOR

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Operating expenses per unit of production for these farms in 1952 were more than double the 1937-41 average. However, prices received by farmers for farm products increased still more. Increases in production per farm have helped hold down operating expenses per unit of production. The sharp increase in unit expenses on the High Plains cotton farms in 1953 was due to the low yields and high abandonment caused by the drouth in the Southwest.

FIGURE 5

## Hog-Beef Fattening Farms - Corn Belt

Net farm incomes on hog-beef fattening farms will be about 14 percent lower in 1953 than in 1952 and the lowest since 1945. Operators of these particular farms raise all of the corn they feed and feed about as much of it to hogs as to cattle. They also buy feeder cattle in the fall and sell them as fat cattle about 12 months later. Net returns from the cattle feeding enterprise will be small this year but returns from the business as a whole will be fairly good relative to other types of farms.

Prospects are for higher net returns on these farms in 1954, assuming continuation of feeding operations. Many farmers who bought feeder cattle last fall may decide not to take the risk again this year. On the average, Corn Belt farmers who bought feeder cattle in October 1952 and sold them as fat cattle in April 1953 got nothing for their work and only about 75 cents a bushel for the corn they fed. The price of choice grade slaughter steers at Chicago was about $4.00 per hundredweight higher in late September than in April 1953.

Some parts of the cattle feeding area will have lower corn yields this fall but other parts will have one of the largest crops ever harvested. Low returns from cattle feeding will be partly offset by higher returns from hogs in 1953 despite an 8 percent drop in the number of hogs sold.

## Cotton Farms

If mid-September 1953 prices for cotton and cottonseed prevail throughout the remainder of the season net farm incomes in 1953 on most cotton farms will be about 10 percent below those of 1952. Prices farmers receive for lint are now from 5 to 10 percent below the season average price of last year and cottonseed prices are down about 25 percent. Prices received for most other products sold on cotton farms are below a year ago, but prices paid for all production items except feed have remained nearly the same or have increased since last year.

If cotton allotments are in effect in 1954 net farm incomes on most cotton farms are likely to be substantially below those of recent years unless prices received for lint and seed are considerably above present levels.

## Southern Piedmont Cotton Farms

At present cotton prices the net farm income for 1953 on southern Piedmont cotton farms is estimated at about $1,350 or 10 percent below 1952. The yield of cotton is slightly lower than in 1952 and somewhat below normal. However, most of the reduction in income results from less favorable price-cost relationships. With acreage allotments and average yields in 1954 and prices for cotton lint and seed at September 1953 levels, the net farm income in 1954 might average around $1,100 or about 20 percent below 1953 and 30 percent below 1952.

## High Plains, Texas Cotton Farms

Dry weather in 1953 has cut cotton production on nonirrigated High Plains cotton farms nearly 80 percent below the 1952 crop. Approximately two-thirds of the acreage was abandoned and yields on the remaining acreage will average about 100 pounds lint compared with 156 pounds in 1952. If the grain sorghum planted on this abandoned acreage matures before frost, net farm incomes probably will average around $1,700; about 70 percent below the income in 1952. An early frost, of course, would reduce incomes substantially below this estimate. With acreage allotments, average yields, and present cotton prices, net farm incomes on these cotton farms probably would average about $4,000 in 1954. This is considerably above the 1953 estimate but 25 percent below 1952.

## Wheat-Small Grain-Livestock Farms, Northern Plains

Net farm incomes in 1953 on family-operated wheat farms in the Northern Plains probably will average around $4,400; about 20 percent above 1952 incomes. Yields of wheat and flax in 1953 will average about the same as in 1952, but yields of oats, barley and hay will be higher. However, 1953 yields were well below average. The wheat crop, particularly durum and late-planted other spring wheat was damaged severely by stem rust and hot, dry weather at filling time. Cost rates for most production items have changed little from 1952 to 1953. Wage rates for hired labor, and taxes, however, are slightly higher. Total cash expenditures in 1953 will average slightly lower than in 1952 on these farms mostly because fewer new machines were bought and less was spent for new buildings and remodeling of existing farm buildings.

With normal yields in 1954 and expected changes in crop acreages because of acreage allotments for wheat, net farm incomes in 1954 on wheat farms in the Northern Plains might average 10 to 15 percent above those of 1953. However, if crop yields in 1953 had been up to normal the net farm income in 1953 would have been 20 percent higher than the prospects for 1954.

## Effect of Rent and Interest Payments on Farm Returns

The estimates of net income presented above for the 6 types of farms are calculated on an owner-operator basis with no allowance for rent and interest paid. Under actual operating conditions, dairy farms and other livestock farms tend to be owner-operated but with various degrees of indebtedness. On the other hand, many of the spring wheat and cotton farms are operated by tenants. By assuming that all types of farms are operated under the same conditions of ownership the incomes from different types of farms are directly comparable. However, actual conditions of tenure and indebtedness vary among farms and returns to the operators vary with tenure and debt status.

Charges for the use of borrowed and rented capital and the return to operator and family on a wheat-small grain-livestock farm under four sets of assumptions relative to tenure and debt status are given in table 8.

Table 8.- Rent and interest paid and return to operator and family under different assumptions of tenure and debt status, wheat-small grain-livestock farms, Northern Plains, 1937-41 and 1953

| Tenure and debt status | Rent and interest paid |  | Return to operator and family 1/ |  |
|---|---|---|---|---|
|  | 1937-41 av. | 1953 | 1937-41 av. | 1953 |
| A. Owner-operated: | $ | $ | $ | $ |
| 1. No debts | 0 | 0 | 872 | 4,384 |
| 2. Average mortgage on real estate and no debts on working assets or operating capital | 199 | 219 | 673 | 4,165 |
| 3. Fifty percent equity in real estate, livestock & machinery, no other debts | 252 | 938 | 620 | 3,446 |
| B. Tenant operated: |  |  |  |  |
| 1. Pays one-third of grain as rent | 2/ 281 | 2/1,968 | 591 | 2,416 |

1/ Net income available to operator and family for their labor and management and their investment in the farm business.

2/ Net rent, value of crops less landlord's expenses.

For farmers with relatively high debts and for tenants the situation in 1953 is quite different from what it was in 1937-41. Owner-operators with a 50 percent equity in their land and building, livestock and machinery paid 3 to 4 times as much for the use of capital in 1953 as in 1937-41, and share tenant paid about 6 to 7 times as much. With lower yields or lower prices, however, the value of the rent paid by the tenant would be lower, but the fixed payment of the owner-operator with large debts would remain the same.

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# THE Farm Cost SITUATION

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UNITED STATES DEPARTMENT OF AGRICULTURE

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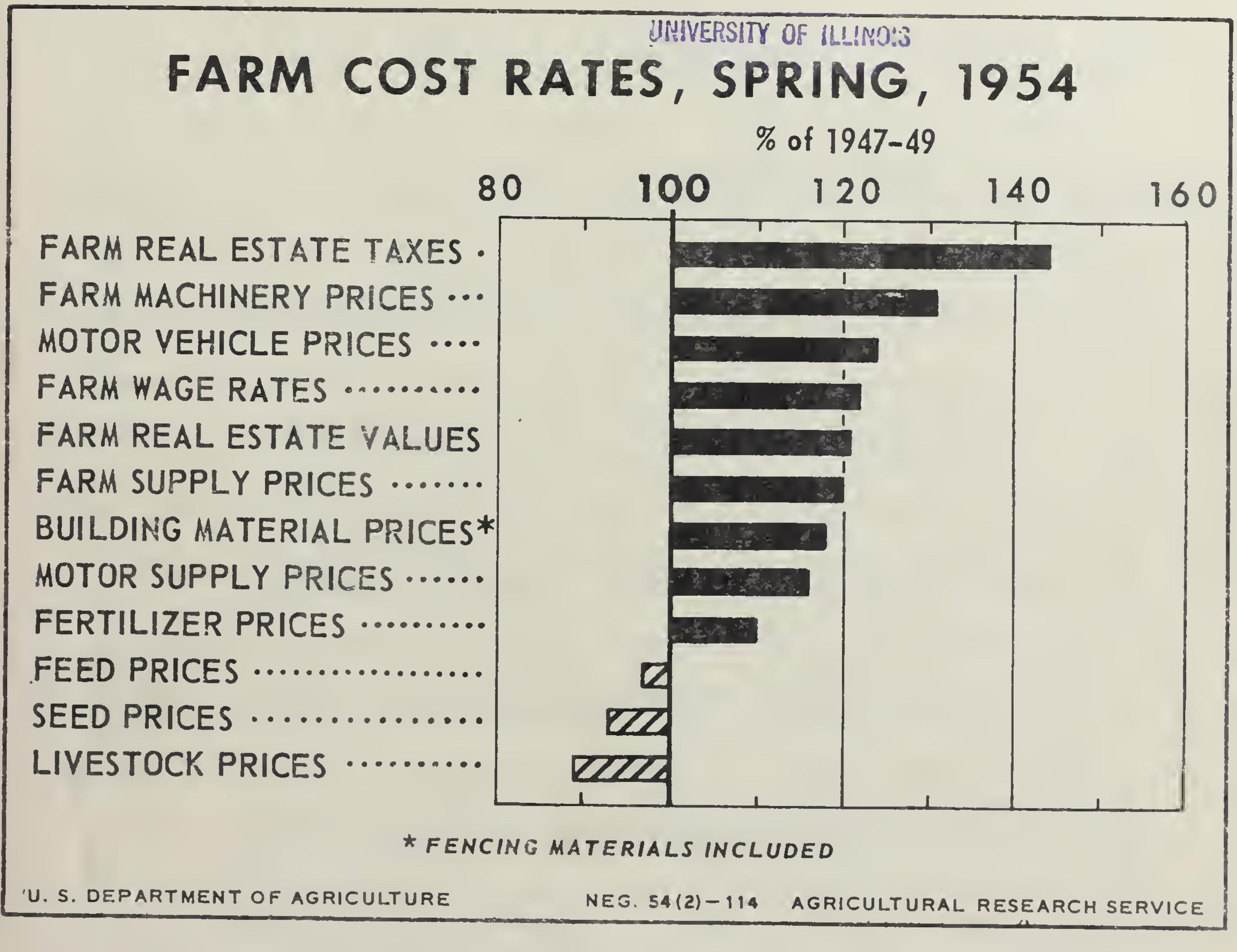

FARM COST RATES, SPRING, 1954

* FENCING MATERIALS INCLUDED

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Prices paid by farmers for most items used in production are considerably higher than they were in 1947-49. The items that are lower in price are mainly those that farmers buy either directly or indirectly from other farmers. Fertilizer has not gone up in price as much as production goods in general so that farmers who use more of it are usually able to reduce their costs per unit of production. Total farm production is thereby increased because other production inputs are not reduced immediately.

Goods and services used in production: Prices paid by farmers and farm wage rates, United States
Index numbers (1935-39 = 100)

| Year | Commodities, interest, taxes and wage rates 1/ | Commodities only | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 2/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910-14 | 79 | 80 | 95 | 81 | --- | --- | 65 | 71 | 69 | 98 | 84 | 82 |
| 1915-19 | 118 | 121 | 149 | 123 | --- | --- | 85 | 117 | 97 | 141 | 127 | 122 |
| 1920-24 | 131 | 117 | 133 | 94 | --- | --- | 101 | 130 | 116 | 141 | 124 | 149 |
| 1925-29 | 131 | 116 | 127 | 123 | 127 | 89 | 101 | 123 | 111 | 129 | 123 | 152 |
| 1930-34 | 101 | 90 | 85 | 71 | 99 | 89 | 95 | 103 | 96 | 106 | 81 | 100 |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 121 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 156 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 192 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 204 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 210 | 198 | 200 | 324 | 143 | 199 | 180 | 176 | 215 | 141 | 193 | 351 |
| 1951 | 232 | 220 | 225 | 395 | 150 | 212 | 194 | 189 | 239 | 149 | 197 | 388 |
| 1952 | 237 | 221 | 239 | 331 | 151 | 222 | 201 | 200 | 240 | 153 | 223 | 416 |
| 1953 | 227 | 204 | 216 | 234 | 154 | 224 | 203 | 202 | 241 | 154 | 205 | 424 |
| Jan. | 234 | 214 | 232 | 275 | --- | 223 | --- | --- | --- | --- | --- | 425 |
| Feb. | 232 | 210 | 228 | 265 | --- | --- | --- | --- | --- | --- | 213 | --- |
| Mar. | 232 | 210 | 227 | 266 | 151 | 225 | 203 | 204 | 241 | 154 | 210 | --- |
| Apr. | 229 | 207 | 223 | 248 | --- | 224 | --- | 204 | --- | 154 | 205 | 420 |
| May | 229 | 207 | 220 | 250 | --- | --- | --- | --- | --- | --- | 201 | --- |
| June | 223 | 200 | 215 | 204 | 152 | 224 | 204 | 201 | 241 | --- | --- | --- |
| July | 225 | 202 | 212 | 220 | --- | 224 | --- | --- | --- | --- | --- | 425 |
| Aug. | 225 | 201 | 211 | 214 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 223 | 199 | 210 | 210 | 156 | 223 | 204 | 199 | 240 | 154 | 197 | --- |
| Oct. | 222 | 198 | 206 | 208 | --- | --- | --- | --- | --- | --- | --- | 426 |
| Nov. | 224 | 200 | 204 | 223 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 225 | 202 | 210 | 223 | 157 | 223 | 204 | 202 | 241 | --- | --- | --- |
| 1954 | | | | | | | | | | | | |
| Jan. | 230 | 205 | 212 | 251 | --- | 224 | --- | --- | --- | --- | --- | 434 |
| Feb. | 230 | 206 | 214 | 251 | --- | --- | --- | --- | --- | --- | 192 | --- |

1/ Revised to reflect revisions in interest and tax indexes. 2/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices," Bureau of Agricultural Economics, September 30, 1953.

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# THE FARM COST SITUATION

Approved by Outlook and Situation Board, March 4, 1954

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## GENERAL SITUATION

The cost-price squeeze has changed little since last fall. While prices received for farm products have risen prices paid for items used in production also have increased. Prices paid for feed and for feeder and replacement livestock have risen from the lows of last fall but are still somewhat below a year earlier. Prices paid for industrial items are at about the same level as a year ago. There is little indication at this time that the cost-price relationships in agriculture will be changed materially during the remainder of 1954.

Among the cost-items of most direct concern to farmers this spring are seed, fertilizer, motor supplies and hired labor. Average farm wage rates for the country as a whole are slightly higher than a year ago, but may ease off slightly and likely will not differ greatly from those of 1953. The number of workers available is expected to be greater than last year reflecting an easier employment situation in the economy generally but this will differ among areas. The demand for farm labor in the South may be reduced in view of the acreage restriction on cotton.

Prices paid for seeds are averaging about 10 percent lower than a year ago. Certain kinds such as Ladino clover, Sudangrass, crested wheatgrass, alsike clover, smooth brome, improved varieties of alfalfa, and Kobe lespedeza are among the important seeds for which prices are now lower than a year ago. Kentucky bluegrass, redtop, sweet clover, common ryegrass, soybeans and seed oats are among the important ones for which prices are higher than a year ago. It generally is poor economy to attempt to pare cash costs by substituting lower yielding varieties for higher yielding ones, but farmers can cut cash outlays in some instances by using home-grown seeds.

Prices of motor supplies (fuel, oil, lubricants, etc.) are slightly higher than a year ago. Purchases of these items represent direct cash outlays. Farmers can cut these costs some by careful planning of work programs, careful loading of power units, and performing work at proper time.

Current price quotations for fertilizers are averaging about the same as a year ago. Some kinds are slightly higher while some are lower. There are indications that fertilizer prices as a whole will average slightly lower for the current season. Relative to prices paid for many other items used in production and to prices received for farm products, fertilizer is still a good buy (fig. 1). Farmers will find it advantageous to continue their pasture, hay and crop improvement programs.

Prices paid for farm machinery and motor vehicles have increased about 1 percent from a year ago and now are at record high. During the last year cash discounts and trade-in allowances have been more liberal and probably will continue so in 1954.

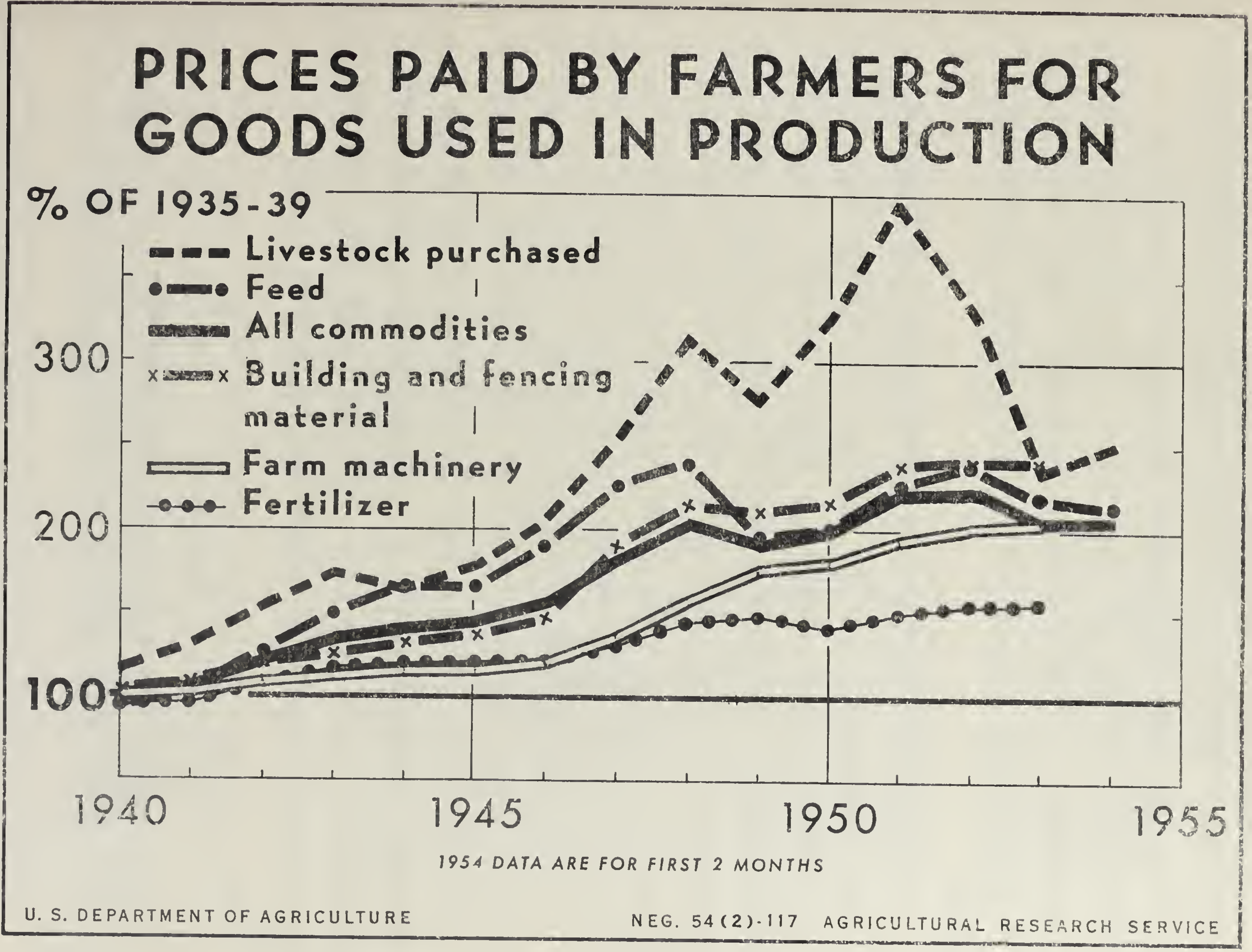
PRICES PAID BY FARMERS FOR GOODS USED IN PRODUCTION
% OF 1935-39
Livestock purchased
Feed
All commodities
Building and fencing material
Farm machinery
Fertilizer
300
200
100
1940
1945
1950
1955
1954 DATA ARE FOR FIRST 2 MONTHS
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FIGURE 1

Prices paid for lumber, particularly top grades, cement, housepaint, asphalt shingles, and composition roofing are higher than a year ago. On the other hand, prices paid for galvanized roofing and baler and binder twine are lower. On the average prices of building materials and farm supplies are about the same as a year earlier and little change is expected during 1954. Supplies are generally adequate to meet expected needs.

Farm real estate values are now averaging around 8 to 10 percent lower than a year ago. Interest rates charged on farm real estate mortgages have been relatively steady during the past year, but are slightly higher than in 1952. Farmers with reasonable equities and good repayment prospects probably will experience little difficulty in obtaining mortgage credit. Lenders are putting more emphasis on operating efficiency and expected income and expenses of prospective borrowers.

Farm real estate taxes are continuing their upward trend. These taxes levied in 1953 and payable largely in 1954 are expected to increase by around 4 or 5 percent. Rates charged for insurance on farm property by farm mutual insurance companies have not changed during the past year, and no increase is expected in 1954. Farmers are paying higher premiums because they have increased the coverage more in line with value of property.

## Farm Labor

On an average, farm wage rates in 1954 likely will not be greatly different from 1953. Some increase in the over-all supply of farm labor and some decrease in labor needs are expected compared with last year. However, the labor supply and demand, and wage rates are expected to vary among regions.

Several factors point toward changes in the farm labor situation in the South. The national cotton acreage allotment for 1954 is about four million acres less than the 1953 planted acreage. If acreage in cotton is reduced by 4 million and an average yield is obtained, total man-hour requirements for cotton would be reduced by about 20 percent.

The net effect on total labor requirements of cotton acreage allotments, of course, will depend on what use is made of the diverted acres. Replacement of cotton by labor intensive crops would mean little net change. Feed crops, on the other hand, would take much less labor per acre than cotton. The net effect of acreage allotments, average yields and average weather would be to reduce significantly the demand for seasonal farm workers, especially during the cotton chopping and picking seasons.

If non-farm job opportunities in the South and elsewhere should decrease significantly this would add to the supply of farm labor in the South. Most important would be a reduction in the number of persons of working age migrating from southern farms. Also adding to the supply would be the return to the South of some workers, formerly employed on southern farms who would be released from non-farm jobs in other regions. An increase in farm labor supply from these sources, plus reduced man-labor, requirements for cotton, would tend to build up the labor supply, and possibly result in lower wage rates in this region.

Some increase in the supply of farm labor and little change in wage rates from 1953 probably will be the pattern in other broad regions. In the highly mechanized wheat and corn areas, acreage allotments likely will result in little change in total labor requirements. The crops substituted for wheat and corn probably will take about as many man-hours as would the wheat and corn. The total man-hours worked in agriculture probably will continue to decline (table 1 and fig. 2).

The supply of experienced year-round workers is expected to continue tight generally. Offshore domestic workers are expected to be available again for seasonal contract farm work. Efforts are continuing to negotiate an international agreement with Mexico so that Mexican Nationals may be employed again. Workers from Canada and the British West Indies also will be available.

## Farm Power and Machinery

Wholesale prices of farm machines and equipment including tractors are now about 12 percent higher than in June 1950 and about 75 percent higher than the average prices in the prewar period 1935-39. Prices since January 1, 1951, have been relatively stable and probably will show little change in 1954. Wholesale price quotations for tractors and machines ordinarily do not include all the attachments and accessories commonly sold to farmers in any given year.

Retail prices in 1953 were a little more than double the prewar prices. However, modern machines are much better equipped than prewar models. Then, too, freight rates have increased substantially in recent years. During the past year cash discounts and trade-in allowances have been more liberal and probably will continue so in 1954.

Table 1.- Farm wage rates and related data, United States, 1935-39 average and 1940-53

Index numbers (1935-39=100)

| Period or year | Farm employment |  |  | Man-hours of farm work 2/ | Farm output 3/ |  | Gross farm income per man-hour 4/ | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
|  | Total 1/ | Family 1/ | Hired |  | Total | Per man-hour |  |  |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 91 | 94 | 98 | 110 | 112 | 107 | 107 |
| 1941 | 89 | 88 | 93 | 97 | 114 | 118 | 136 | 125 |
| 1942 | 88 | 87 | 89 | 101 | 128 | 127 | 177 | 163 |
| 1943 | 87 | 88 | 85 | 100 | 125 | 125 | 220 | 217 |
| 1944 | 85 | 87 | 78 | 100 | 130 | 130 | 232 | 263 |
| 1945 | 83 | 86 | 74 | 95 | 129 | 136 | 257 | 297 |
| 1946 | 86 | 89 | 76 | 93 | 133 | 143 | 300 | 320 |
| 1947 | 87 | 89 | 79 | 91 | 128 | 141 | 360 | 346 |
| 1948 | 86 | 88 | 82 | 89 | 138 | 155 | 374 | 365 |
| 1949 | 83 | 84 | 79 | 89 | 137 | 154 | 344 | 354 |
| 1950 | 78 | 79 | 73 | 83 | 136 | 164 | 372 | 351 |
| 1951 | 75 | 77 | 69 | 86 | 139 | 162 | 414 | 388 |
| 1952 | 72 | 74 | 67 | 83 | 144 | 173 | 424 | 416 |
| 1953 6/ | 72 | 73 | 68 | 82 | 144 | 176 | 412 | 424 |

1/ Includes farm operators and members of their families working without wages.

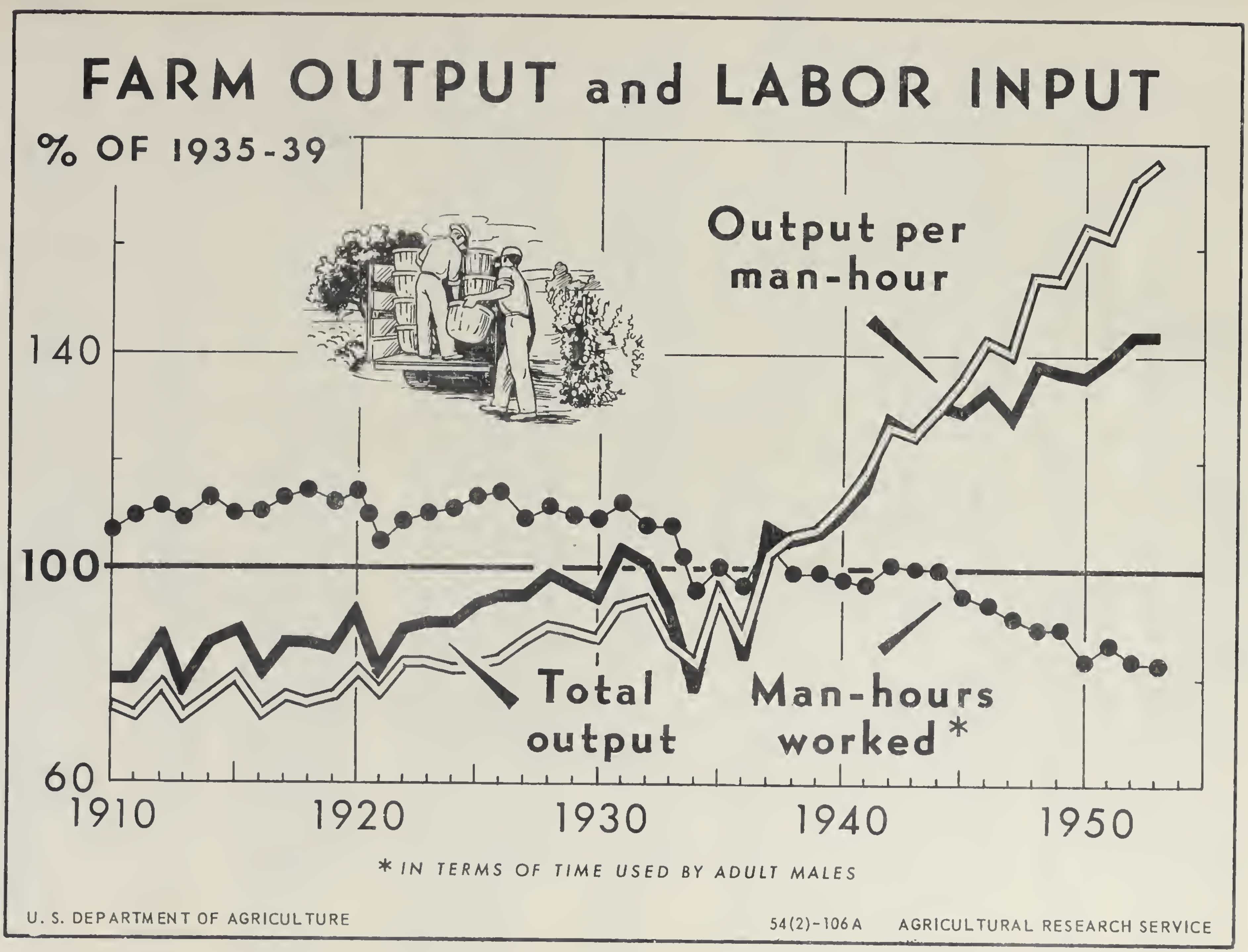
2/ Total man-hours of farm work in terms of the time required by average adult male workers.

3/ Net calendar-year production for eventual human use.

4/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased at about the same rate as have farm wage rates from the prewar years of 1935-39 to 1953.

5/ Simple average of quarterly indexes seasonally adjusted.

6/ Preliminary. Estimates of farm output and man-hours for 1953 based chiefly on December 1953 report of the Crop Reporting Board.



* IN TERMS OF TIME USED BY ADULT MALES

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FIGURE 2

Farmers' expenditures for machinery in relation to income have been high since 1947. Following the outbreak of War in Korea, farmers spent a higher percentage of their income for machinery in 1950 and 1951 than in any previous year (fig. 3). In 1952, however, expenditures declined appreciably and in 1953 were probably about 9 percent below 1952.

Exports of farm machinery in the first 10 months of 1953 were about the same as for the same months of 1951 and 1952. Exports of crawler tractors increased in 1953, accounting for about one-fourth of total exports.

Preliminary estimates indicate that on January 1, 1953 there were 4.4 million tractors of all types on farms, along with 940,000 grain combines and 635,000 corn pickers. About 700,000 farms were equipped with milking machines. On January 1, 1940, about four months after the outbreak of World War II, there were about 1.5 million tractors, 190,000 grain combines, and 110,000 corn pickers; and 175,000 farms were equipped with milking machines. There were about 2,500,000 motortrucks on farms January 1, 1953 compared with 1,047,000 on January 1, 1940. Further increases in numbers of motortrucks occurred during 1953. On the other hand, numbers of automobiles on farms have shown but little increase for several years. There were around 4.4 million automobiles on farms January 1, 1953. This is only about 10 percent more than were on farms in 1930 or 1940.

The number of horses and mules on farms January 1 at 5.0 million head is the lowest on record and only 32 percent of the number in 1935-39 (table 2). Despite this decline the total volume of machinery and power (including work animals) is now about 90 percent greater than in 1935-39.

Numbers of the major machines on farms can be expected to increase in the years ahead, but the increase will be much below the high rate in recent years. In most areas of the country, agriculture has become mechanized and the present machines and equipment are about sufficient to maintain agricultural production at a high level. Machinery replacements are becoming an increasingly important factor in determining the volume of purchases.

Because of increased farm mechanization and higher prices operating and depreciation costs have become major items of expense. On 160-acre hog-dairy farms in northeastern Iowa the total of these two items increased from about $500 in the 1930's to nearly $2,000 in 1953 (fig. 4). Further increases are probable in 1954.

In the replacement program some farmers may find it advantageous to exchange the machinery and equipment they now have for larger sizes. There is a point, however, beyond which increased mechanization will not pay.

There is little doubt, for example, that most farms in the Corn Belt can be operated more efficiently with tractors than with horses. But all farmers in that region cannot economically replace 2-plow tractors and 2-row equipment with 3-plow tractors and 4-row equipment as many farmers in the Corn Belt are doing.

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-53

Index numbers (1935-39 = 100)

| Year or period | Number on farms, January 1 1/ | | | | | | Volume on farms, January 1 2/ | | Gross farm income calendar year 3/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules all ages | Work stock 3 years old and over | Colts under 1 year of age | Tractors | Automobiles | Motortrucks | All machinery and equipment other than tractors and other motor vehicles | All farm power (including work animals) machines and equipment | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 118 | 106 | 105 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 126 | 109 | 132 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 141 | 116 | 179 | 148 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 158 | 121 | 220 | 180 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 162 | 121 | 232 | 184 |
| 1945 | 76 | 77 | 54 | 195 | 106 | 153 | 178 | 126 | 244 | 193 |
| 1946 | 71 | 73 | 42 | 206 | 109 | 159 | 197 | 131 | 272 | 221 |
| 1947 | 64 | 67 | 35 | 220 | 112 | 175 | 219 | 137 | 328 | 258 |
| 1948 | 59 | 62 | 31 | 240 | 108 | 195 | 252 | 147 | 333 | 268 |
| 1949 | 54 | 57 | 28 | 266 | 110 | 212 | 286 | 158 | 306 | 234 |
| 1950 | 49 | 52 | 23 | 290 | 108 | 227 | 310 | 166 | 309 | 241 |
| 1951 | 45 | 48 | 19 | 317 | 110 | 237 | 337 | 175 | 356 | 282 |
| 1952 | 40 | 42 | 16 | 335 | 112 | 248 | 366 | 184 | 352 | 269 |
| 1953 | 35 | 38 | 15 | 354 | 113 | 257 | 379 | 188 | 338 | 241 |
| 1954 4/ | 32 | 34 | 14 | | | | | | | |

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1/ The 1935-39 average was for horses and mules all ages, 15,750,000 head; for workstock 13,700,000 head; for colts 744,000 head; for tractors 1,244,000; for automobiles 3,896,000; and there were 973,000 motortrucks.

2/ In terms of 1935-39 prices.

3/ Includes Government payments.

4/ Preliminary.

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A recent study in the Corn Belt indicates that for every hour of labor saved by using the larger rather than the smaller tractor equipment the machinery cost is increased by about 90 cents. This is almost as much as farmers pay for labor that is hired by the hour and it is more than the hourly earnings of many farm operators who must decide whether to invest in larger equipment or try to get along with what they have.

The field work on a 225-acre cash grain farm in the Corn Belt can be done in about 200 fewer hours where the larger equipment is used than where the smaller equipment is used. The machinery cost is, however, about $180 a year higher where the larger equipment is used.

Some farmers can afford to pay $180 for 200 hours of additional leisure time but few farmers with less than 200 acres of cropland can justify the purchase of larger equipment on the ground that it would reduce their costs or increase their net incomes.

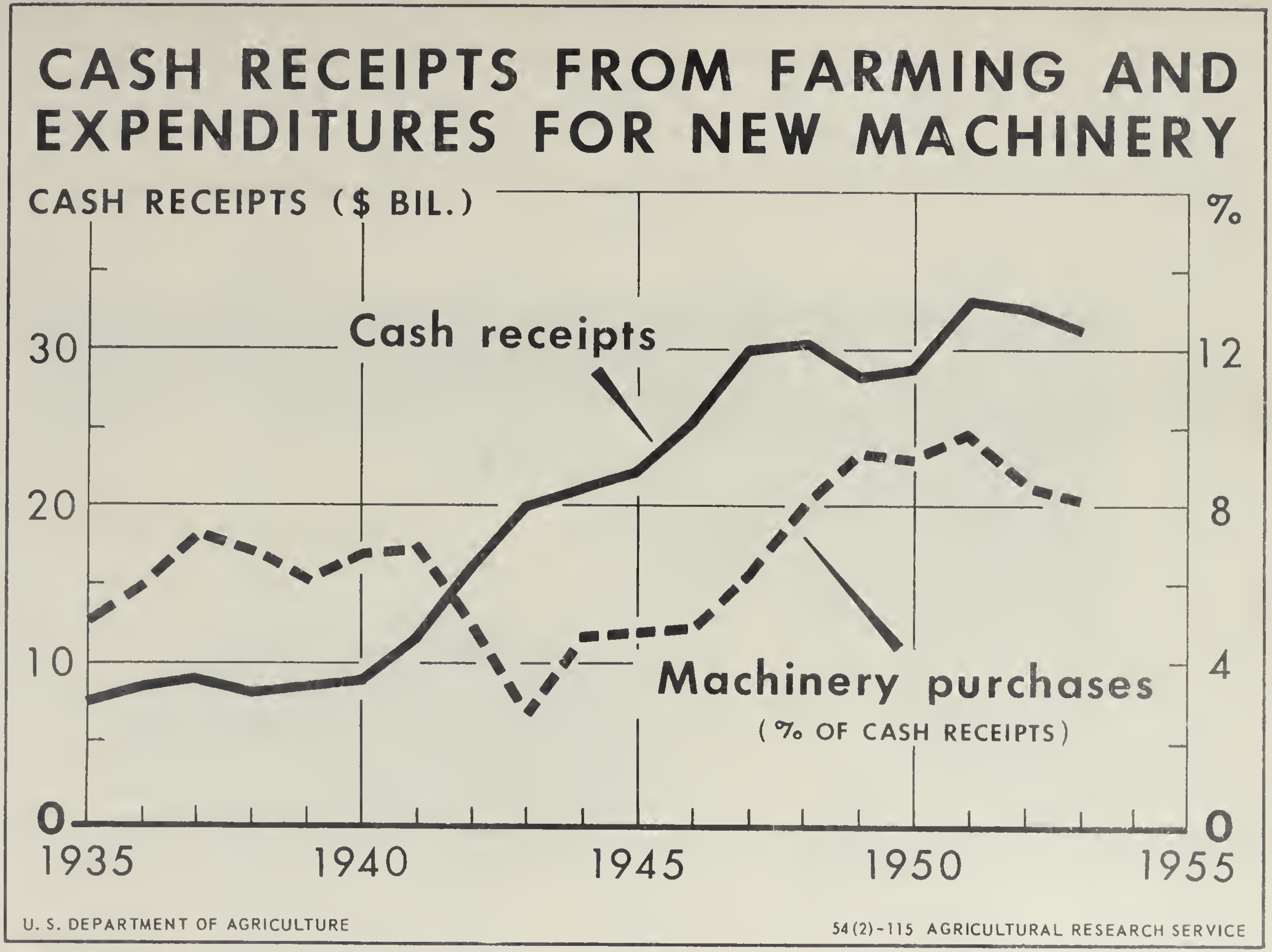
Farm wage rates have been high relative to prices of machinery and tractor fuel for so long that many farmers have made full adjustment to the present price relationships. The statement that increased mechanization would reduce costs and increase efficiency applies to a much smaller number of farms today than 10 years ago. The answer to the question of whether it would pay to invest in larger equipment often hinges on whether the size of the farm can be increased, and on the greater production obtained by getting work done at the proper time.

Despite the recent decline in farm earnings competition for available land is very great in most farming areas. The large number of farmers who need more land to make efficient use of the equipment they now have makes it advisable for a farmer to know where he can obtain the land before he buys equipment to operate more land.

## Feed

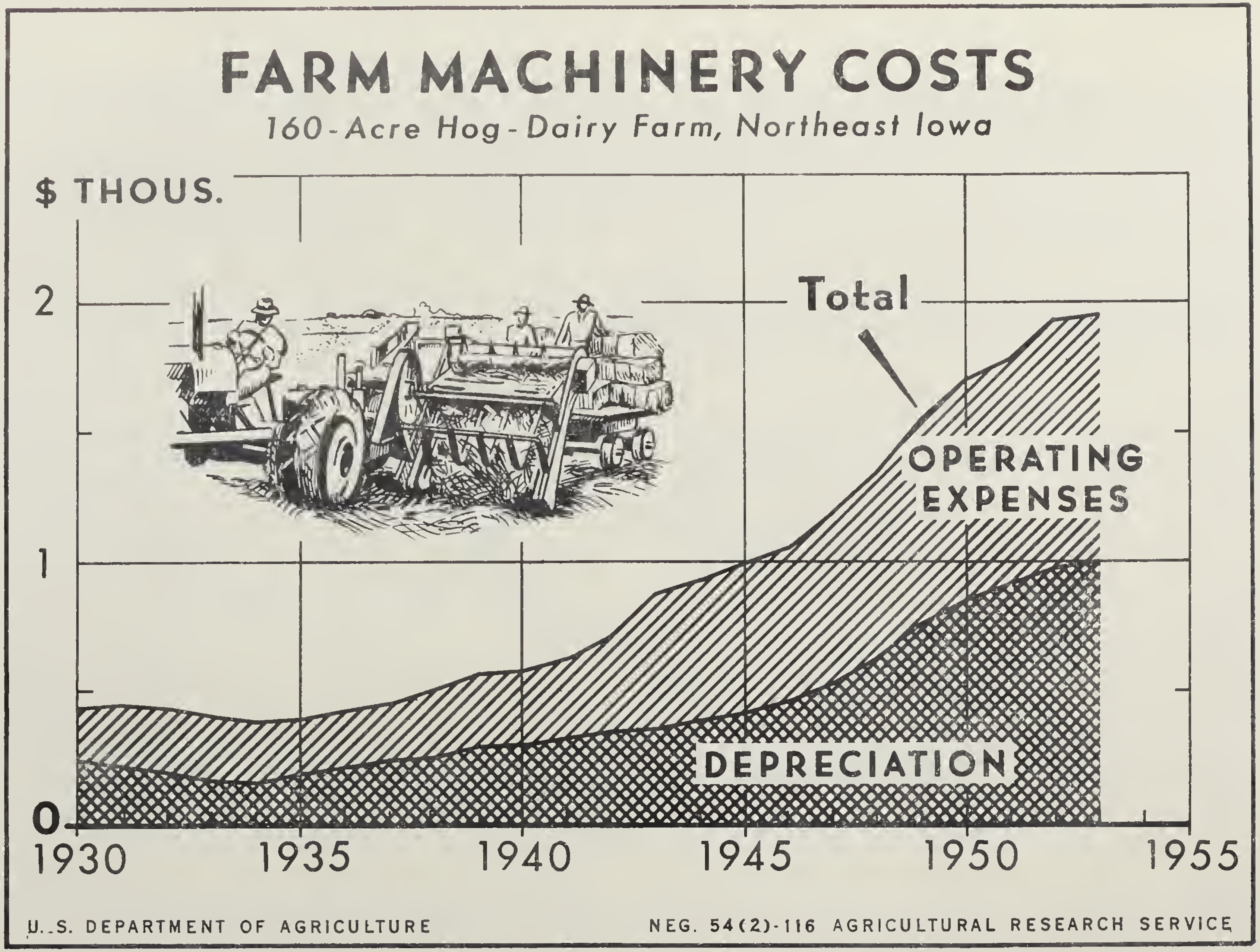
The supply of feed grains is ample for all current needs and the carryover next fall probably will be up about 10 percent from a year earlier and near the record 1950-51.

Compared with a year earlier the number of milk cows on January 1 was up about 3 percent, cattle on feed down 9 to 10 percent, other beef cattle up 1 to 2 percent, the size of the laying flock was up 2 to 3 percent, and the number of horses and mules was down 9 percent. It is expected that broilers will be up 5 percent from 1953 and that farm chickens raised also will increase. Farmers' January intentions were to raise 6 percent more heavy-breed turkeys and 9 percent more of the light breeds. The fall pig crop of 1953 was 9 percent below a year earlier, but farmers intended to have 6 percent more sows farrow 1954 spring pigs than last year. In total, there are about 2 percent fewer grain-consuming livestock in the current feeding year, beginning October 1, 1953.



Farmers' purchases of new machines (excluding automobiles and motortrucks) and repair parts were at high levels from 1949-1951 and amounted to more than 9 percent of the total cash receipts from farming in each year. During the prewar period (1935-39) farmers spent around 6 percent of their cash income for new machinery. Expenditures for machinery in relation to farm income was low during the war years when machinery production was restricted. Following the outbreak of war in Korea, farmers spent a higher percentage of their income for machinerv in 1950 and 1951 than in any previous year. Farmers reduced their purchases of new machines in 1952 and 1953.

FIGURE 3



FARM MACHINERY COSTS

160-Acre Hog-Dairy Farm, Northeast Iowa

U.S. DEPARTMENT OF AGRICULTURE

NEG. 54(2)-116 AGRICULTURAL RESEARCH SERVICE

Farm machinery costs on these farms are roughly four times as high as they were in the early 1930's. Increases in prices of farm machinery and motor supplies account for about half of this increase. The other half is due to greater use of machinery on these farms. The fact that prices paid for farm machinery and motor fuels went up relatively less than farm wage rates following the outbreak of World War II caused farmers to use more machinery and less labor.

Figure 4

The 1953-54 hay supply, estimated in December at 120 million tons, is about the same as a year earlier, and the number of roughage-consuming animals is up about 1 percent. Numbers of hay-consuming livestock have been trending upwards. The supply of hay per unit is about 4 percent below the 1946-50 average. Supplies of hay in most of the northern and western States have been ample, but were short again this year in much of the South and Southwest. In addition, pastures were poor this past fall and increased feeding of hay and other feeds was necessary in many areas. Substantial shipments of hay, cottonseed meal and cake, and other feeds have been made to farms in these areas under the drought relief program.

In February prices paid by farmers for feeds averaged about 6 percent below a year earlier (table 3). Feed prices in general probably will be near those of a year earlier during the next few months. Prospects for 1954 feed grain crops will become important factors in influencing feed prices in the early summer. The index of prices of all livestock and livestock products on February 15, 1954 was the same as a year earlier. The price of all livestock and livestock products except eggs, wool, and hogs, were lower. Prices received for hogs were 31 percent higher, but prices received for beef cattle were down 14 percent and lambs were down 6 percent.

Compared with a year ago returns per dollar of feed costs are higher for all livestock and livestock products except broilers, beef cattle and milk. Returns for hogs and eggs are substantially above the 1937-51 average (table 4). Returns for raising sheep, beef cattle and broilers are about 20 percent below the 1937-51 average.

At present many farmers are in a cost-price squeeze. Some who have livestock enterprises that are clearly and basically unprofitable will have to shift into other enterprises that offer better promise of a profitable outcome. But there are many farmers with enterprises that are unprofitable under present price-cost conditions who could make adjustments in the enterprise to make it profitable. These adjustments involve in some cases handling larger numbers of livestock with the same labor or in remodeling buildings and operations so that less labor will do the job. Other opportunities to increase net returns include the use of higher producing animals, following improved feeding practices or using better quality hay and pasture and less grain and high protein feeds.

For some livestock, especially hogs, it may be that more high protein feeds will save enough grain to more than pay for the protein feeds, especially in early stages of growth. Many farmers in the Corn Belt still feed only half as much protein to hogs as is profitable. On the other hand, some dairymen feed formula-feeds with the same percentage protein when cows are on good pasture in the summer as they do in the winter on dry-lot. This is usually a waste of feed in the summer and an unnecessary cost.

Table 3.- Average prices of feeds in the United States, February 15, 1954 with comparisons

| Item | Unit | Feb. 15, 1952 | Feb. 15, 1953 | Sept. 15, 1953 | Feb. 15, 1954 |
|---|---|---|---|---|---|
| Prices received by farmers | | | | | |
| Corn | Bushel | $ 1.66 | $ 1.43 | $ 1.50 | $ 1.43 |
| Oats | do. | .89 | .77 | .71 | .78 |
| Barley | do. | 1.38 | 1.28 | 1.12 | 1.15 |
| Sorghum grain | Cwt. | 2.51 | 2.65 | 2.26 | 2.32 |
| Hay, baled | Ton | 25.40 | 25.60 | 20.90 | 23.70 |
| Feed grains and hay, Index number (1935-39 = 100) | | 247 | 223 | 216 | 217 |
| Prices paid by farmers | | | | | |
| Mixed dairy feed 16% | Cwt. | 4.45 | 4.19 | 3.90 | 3.99 |
| Laying mash | do. | 5.31 | 5.02 | 4.80 | 4.86 |
| Broiler mash | do. | | 5.38 | 5.22 | 5.26 |
| Cottonseed meal | do. | 5.10 | 5.03 | 3.72 | 4.02 |
| Soybean meal | do. | 5.30 | 4.93 | 4.60 | 5.01 |
| Linseed meal | do. | 4.97 | 5.36 | 4.60 | 4.91 |
| Meat scrap | do. | 6.74 | 5.76 | 5.37 | 5.43 |
| Bran | do. | 4.04 | 3.58 | 3.11 | 3.27 |
| Middlings | do. | 4.12 | 3.65 | 3.26 | 3.33 |
| Alfalfa hay, baled | Ton | 39.60 | 39.30 | 33.60 | 35.90 |
| Prices paid by farmers for feed, Index number (1935-39 = 100) | | 243 | 228 | 210 | 214 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | | |
| Fed to poultry | Cwt. | 4.25 | 3.96 | 3.82 | 3.86 |
| Fed to milk cows in milk selling areas | Cwt. | 3.68 | 3.69 | 3.40 | 3.44 |
| Fed to milk cows in cream selling areas | Cwt. | 3.47 | 3.22 | 2.99 | 3.06 |

1/ Value of the corn, oats, oil meal, millfeed, formula feed, etc., making up 100 pounds of "grain" ration.

Table 4.- Returns per $1.00 of feed cost of livestock enterprises, United States, Feb. 15, 1954, with comparisons 1/

| Livestock enterprise or product | 1937-51 average | Feb. 15, 1952 | Feb. 15, 1953 | Sept. 15, 1953 | Feb. 15, 1954 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.50 | 1.16 | 1.52 | 1.93 | 1.69 |
| Broilers | 1.64 | - | 1.59 | 1.61 | 1.32 |
| Milk | 1.93 | 2.00 | 1.85 | 2.03 | 1.81 |
| Butterfat | 1.53 | 1.71 | 1.33 | 1.45 | 1.35 |
| Hogs | 1.67 | 1.29 | 1.65 | 1.96 | 2.16 |
| Sheep raising | 1.60 | 1.54 | 1.27 | 1.39 | 1.32 |
| Beef raising | 1.76 | 2.20 | 1.61 | 1.47 | 1.42 |
| Cattle | | 1952-53 | | 1953-54 | |
| feeding | 2/ 1.25 | .72 | | 3/ | |
| | (Index numbers 1937-51 = 100) | | | | |
| | Percent | Percent | Percent | Percent | Percent |
| Eggs | 100 | 77 | 101 | 101 | 113 |
| Broilers | 100 | - | 97 | 98 | 80 |
| Milk | 100 | 104 | 96 | 94 | 94 |
| Butterfat | 100 | 112 | 87 | 85 | 88 |
| Hogs | 100 | 77 | 100 | 119 | 129 |
| Sheep raising | 100 | 96 | 79 | 82 | 82 |
| Beef raising | 100 | 125 | 91 | 80 | 81 |
| Cattle | | 1952-53 | | 1953-54 | |
| feeding | 100 | 58 | | 3/ | |

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1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; 4½ pounds of chick starter per pound of broiler in 1935-39. In 1951 and 1952, 3¼ pounds of chick starter and in 1953, 3¼ pounds of broiler mash. No prices available on broiler mash before 1953. 7¼ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk selling areas plus the value of 110 pounds of hay, per 100 pounds of milk; 7½ pounds of concentrate ration fed to milk cows in cream selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lambs. It was assumed that for each 100 pounds of sheep and lamb produced 20 pounds of wool were produced from the same feed. The quantity of hay for milk cows, beef cattle and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost ¼ as much per pound as they would if obtained from hay. Cattle feeding returns are based on table 3, Livestock and Meat Situation, Aug.-Sept., 1953. It is designed to represent average feeding experience in the Corn Belt.

2/ 1920-52 average. 3/ Season not completed.

Improvement in the quality of roughage fed by many dairy farmers could result in equal or greater production with less grain and high protein feeds. Some of these adjustments to a lower cost can be made immediately. Others such as pasture improvement take time, perhaps several years. Some of these changes require large cash outlays and thus are more difficult for many farmers to adopt. The decision as to whether such outlays should be made depends largely upon whether they will result in lower costs per unit of product and larger net income over a period of years.

Farmers producing turkeys and broilers should study the differences in feed efficiency among different strains of birds. They should also study the costs of different feeds available. The higher priced feed is not always the most efficient in feeding operations. The producer also should consider carefully the weight at which birds are to be marketed as the feed cost per pound goes up fast with every pound increase in weight of bird marketed. Good pasture for turkeys, if handled properly, will save considerable feed. 1/

## Seeds

Prices farmers will pay for most grass and legume seeds this spring will be lower than last spring. Sharpest declines from last year are reported for Ladino clover, Sudangrass, crested wheatgrass, alsike clover, smooth brome, improved varieties of alfalfa, and Kobe lespedeza seed. Of the 18 grass and legume seeds that are sown mostly in the spring and for which production estimates were made in 1953, February retail prices were higher than a year earlier for only three--Kentucky bluegrass, redtop, and sweetclover. Prices are lower for German and Siberian millet, Orange sorgo, rapeseed, Canada field peas, hybrid and open-pollinated seed corn, cowpeas, cottonseed, and seed wheat, barley, and potatoes. But prices of common ryegrass, soybeans, and seed oats are higher.

The supply (1953 production plus carry-over) of the 18 seeds was 722 million pounds, 9 percent less than for the preceding season but 4 percent above the 1942-51 average. Imports of these seeds during the last 6 months of 1953 totaled 36 million pounds, 11 percent smaller than for the same period a year earlier but 29 percent above the average for the previous 5 years. Supplies (including imports) of alfalfa, red clover, alsike clover, Ladino clover, timothy, crested wheatgrass, Sudangrass, and tall fescue seed are more than 25 percent greater than the quantity sown during the 1952-53 planting season. Supplies of white clover, Kentucky bluegrass, and redtop, however, are only about half as much as were sown a year ago. The supply of lespedeza seed is nearly a third less than was used last year.

Demand for grass and legume seeds is expected to be high this season because some acreages formerly in cotton, corn and wheat probably will be seeded to hay and pasture and because forage crops in many sections will require some reseeding due to the severe drought last summer. Farmers probably will profit by buying early the seeds they expect to sow this spring.

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1/ See special article on "Cost Reduction Opportunities in Egg Production", page 35.

## Fertilizer

Prices paid for fertilizers during the 1952-53 season averaged about 2 percent higher than in 1951-52. Prices as a whole may average lower this season. Prices of some kinds will show little change.

For the 12 months ended June 30, 1953 the available supply of major plant nutrients exceeded all previous records. According to information at hand, the supply available for 1953-54 will again reach a new high.

The aggregate 1953-54 supply of the three major plant nutrients is presently forecast at about 11 percent above 1952-53, and should be ample to satisfy expected demands.

Nitrogen (N): The supply of nitrogen (N) available for fertilizer purposes in 1953-54 is currently estimated at slightly over two million tons. This is based on current rates of production and scheduled completion of new synthetic ammonia facilities, and assumes about the same import-export balance as in 1952-53. This represents an increase of a little over 11 percent above the reported 1952-53 supply.

The supply of solid nitrogen materials (dry nitrogen) available for 1953-54 probably represents around 60 percent of the total supply, and solutions and liquid materials (wet nitrogen) amount to 40 percent. For the previous year these percentages, based on trade deliveries, were approximately 62 and 38 percent.

Phosphates ($P_2O_5$): The supply of available phosphates for 1953-54 is presently forecast at 2,667,000 tons, available phosphoric oxide ($P_2O_5$) basis. This estimate is based on current information with regard to the completion dates of new plants, trends in use, and available production data.

The supply of available phosphoric oxide for the current season probably will be about 10 percent above the 2,414,000 tons which were put into domestic trade channels in 1952-53. The new plant capacity scheduled for completion in 1953-54 involves a sizable tonnage of concentrated superphosphate, which should increase substantially the supply of this material now available in relation to the total quantity of $P_2O_5$.

Potash ($K_2O$): Considering the probable increase in domestic production, and assuming approximately the same import-export balance as in 1952-53, a 1953-54 supply of 1,941,000 tons of potash ($K_2O$) is forecast. This amount is about 12 percent above the reported 1952-53 supply of 1,739,000 tons and reflects production from new facilities as well as increases from older producing units.

Profitable use of fertilizer: Farmers should consider the farm as a whole when deciding how to distribute the fertilizer they plan to apply. They also need to consider the total effects of fertilizer used. Use of fertilizer can intensify the problems of an already unbalanced agriculture, or it can aid in bringing it into better balance.

The way the farmer uses fertilizer on all his land, including diverted acres, can greatly influence the success of the adjustment program in general, and the success of the individual farmer in making needed changes on his own farm.

Use of fertilizer and other yield influencing practices is a matter of particular importance in 1954. Farmers can, of course, lower average costs per unit of yield and increase net returns per acre by using fertilizer up to the most profitable rate. This is as true for "surplus" crops as for other crops. But for crops under control programs, application of fertilizer at most profitable rates for the individual farmer may in the short run tend to accentuate the surplus problem. Eventually the burden of this problem must be shared by the individual farmer.

For example, in 7 southeastern States, acreage allotments for next year indicate that about 1,650,000 acres will be diverted from cotton to other uses. If all farmers used the most profitable rates of fertilizer on the remaining acres of cotton, the increase in yield per acre over 1953 yields could result in producing more cotton on the smaller acreage than was produced on the larger acreage in 1953.

The problem of holding down farm costs in relation to prices and incomes in the long run is largely one of making changes in farm enterprises and practices to conform to changes in supply-demand relationships. In keeping with the long-time prospects for relatively favorable demand for livestock and livestock products farmers generally will find advantageous the use of fertilizer in initiating the shift of diverted acres to hay and pasture.

### Building Materials and Farm Supplies

There have been no appreciable changes in the cost of farm building materials since March 1951. But, it takes about $2.70 to buy as much in the way of building and fencing materials now as $1.00 bought in 1935-39.

Prices paid by farmers for 40 different items of building materials are reported in the January issue of Agricultural Prices. Twenty of these items were higher in price on December 15, 1953 than a year earlier, 15 were lower in price and 5 were selling at the same price. Among the items that went up are top grades of lumber, cement and house paint. The most significant reduction was reported for galvanized steel roofing. This item dropped 8 percent during the year while prices of asphalt shingles and composition roofing went up slightly and prices of wood shingles remained unchanged.

Prices of fencing materials are also about the same as they were a year ago. For these items it now takes nearly $2.35 to buy as much as $1.00 bought in 1935-39. Barbed wire is down about 20 to 25 cents a spool from a year ago but woven wire and wood posts are slightly higher. The materials for a 4-strand barbed wire fence cost about $1.49 per rod now compared with $1.50 a year ago. A fence consisting of 32-inch woven wire and 2 strands of barbed wire with alternate wood and steel posts set one rod apart requires about $2.19 worth of materials per rod, the same as a year ago (fig. 5). Included in the cost are 2 galvanized gates per mile of fence.

Prices paid by farmers for most miscellaneous farm supplies are as high if not higher than ever before. Important exceptions, however, are baler and binder twines which were about 10 percent lower in price in June 1953 than in June 1952. Present indications based on recent changes in manufacturers' prices are that retail prices of baler and binder twines may be another 10 percent lower in 1954 than they were in 1953. Mainly because of the reductions in prices of these items the index of prices paid by farmers for farm supplies was about 2 percent lower on December 15, 1953 than a year earlier.

## Pesticides

Stocks of pesticides carried over from the 1953 season are considerably smaller than the large stocks of a year ago. However, much of the reduction is due to smaller stocks of DDT and of some other chlorinated synthetic insecticides. Carryover of benzene hexachloride are about 35 percent larger than a year ago.

Manufacturers' prices of pesticides are slightly higher than they were last fall. However, some manufacturers now pay part of the shipping costs which, in effect, offsets some of the increase in price. Prices quoted for DDT and BHC average more than one-fifth higher than last fall. A year ago prices were depressed by large stocks. Slightly higher prices this spring reflect the return to more normal stocks. In addition, there has been some increase in foreign demand for pesticides, particularly DDT.

Domestic consumption of pesticides may be somewhat higher in 1954 than in 1953. Farmers continue to change from the system of spraying or dusting only when insects and diseases threaten their crops to one of preventive spraying. In some areas the number of boll weevils which entered hibernation last fall was greater than in the last few years. In 1953 the infestation of corn borers was heavier than in 1952 in the north central and some of the eastern States. The large number of eggs laid by grasshoppers over extensive areas in the Midwest and Southwest threaten serious infestations in 1954. However, weather conditions and other natural factors will largely determine the seriousness of infestations as a whole.

The need for pesticides is determined by the severity of insect infestation, fungus infection, and weed growth, which cannot be reliably predicted. Shifts in acreage of particular crops do not affect consumption of pesticides in the United States as much as the year-to-year changes in the degree of infestation.

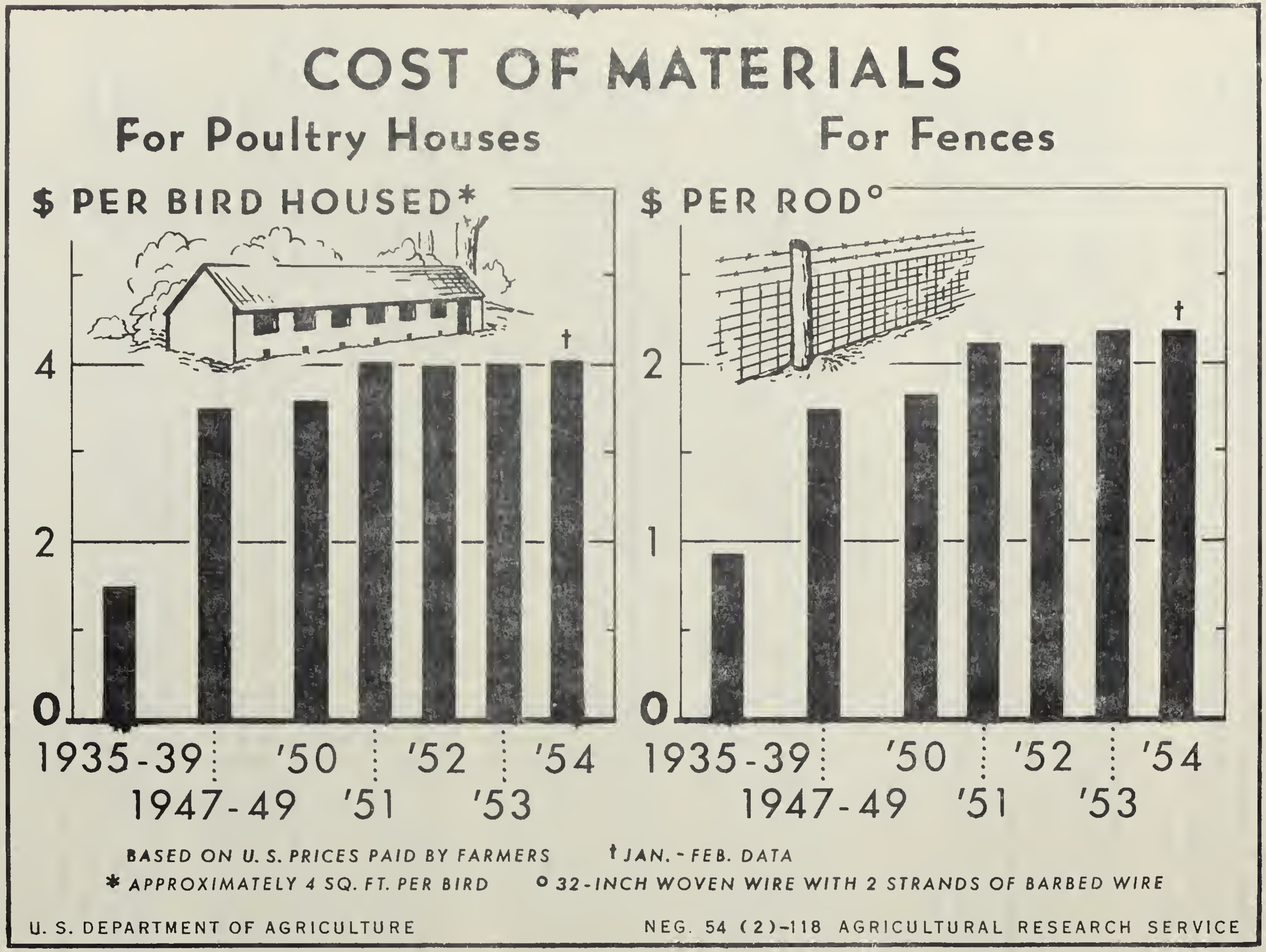
COST OF MATERIALS
For Poultry Houses
For Fences
$ PER BIRD HOUSED*
$ PER ROD°
0
2
4
0
1
2
†
†
1935-39
1947-49
'50
'51
'52
'53
'54
1935-39
1947-49
'50
'51
'52
'53
'54
BASED ON U. S. PRICES PAID BY FARMERS
† JAN. - FEB. DATA
* APPROXIMATELY 4 SQ. FT. PER BIRD
° 32-INCH WOVEN WIRE WITH 2 STRANDS OF BARBED WIRE
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FIGURE 5

Annual expenditures for pesticides vary considerably from year to year and from type of farm to type of farm. In 1953, for example, expenditures on family-operated cotton farms in the southern Piedmont area averaged around $55 per farm. In 1951 these pesticides would have cost nearly twice as much. However, these farmers spent around $80 for pesticides in 1951 as the quantities used were about a fifth less than in 1953. Expenditures in 1952 averaged about $40 per farm. These farms averaged 53 acres of crops harvested in 1953 of which 16 were cotton.

On some types of farms expenditures for insecticides are negligible. Annual expenditures for weed control materials on wheat-small grain-livestock farms in the northern plain averaged approximately $20 per farm in each of the last few years. These farms are much larger than the Piedmont cotton farms. They average about 475 acres per farm with over 300 acres in crops.

## Farm Land Values and Rentals

Farm real estate prices will average slightly lower in 1954 than in 1953. Although the decline during 1953 was relatively small, last year was the first since 1949 that real estate values did not rise. Values last November averaged 3 percent lower than in July and 6 percent below a year earlier. The decline was somewhat larger in the areas where drought and the sharp break in cattle prices had the greatest effect on farm income. Ten States showed declines of 5 percent or more between July and November 1953. Most of these were in the area extending from Kentucky and Tennessee westward to Utah and Arizona. The smallest declines in land values occurred in the New England and Southeastern States. Current indications are that land values are about 8 to 10 percent higher than a year ago.

Past and current levels of farm real estate values can be illustrated best in terms of estimated market values for various types and sizes of commercial family-operated farms. Table 5 shows approximately what farms of various types and sizes cost now compared with what they would have cost before World War II (1937-41), before the Korean outbreak (1947-49), and when farm real estate values were at or near their peak (1952 and 1953). These estimates reflect changes in value per acre only, however, and make no allowance for the long-time upward trend in size of farms in areas and types of farms where increases in size have occurred. The additional capital needed for machinery and equipment and livestock is not included in these estimates. The investment required in these items has increased somewhat more than has land and buildings, so the total investment to buy and equip a farm has increased even more.

With modern machinery and equipment it takes more land to keep a farm family fully employed now than it did 15 years ago. The demand on the part of farm operators for additional land that would increase the efficiency of their operations plus the fact that farming has been relatively profitable in recent years accounts for much of the increase in value of farm real estate since 1940. Then too, farmers have improved their land and buildings considerably since 1940. In many instances, these improvements have involved substantial cash outlays.

Table 5.- Value of farm real estate January 1, by type and size of commercial family-operated farm, 1954 with comparisons

| Location and type of farm | Total acres 1/ | Average 1937-41 | Average 1947-49 | 1952 | 1953 | 1954 |
|---|---|---|---|---|---|---|
| | Number | Dollars | Dollars | Dollars | Dollars | Dollars |
| Corn Belt farms: | | | | | | |
| Cash grain | 224 | 26,900 | 49,100 | 67,000 | 69,400 | 64,300 |
| Hog-beef fattening | 196 | 15,500 | 27,100 | 37,200 | 36,100 | 34,100 |
| Hog-beef raising | 212 | 8,500 | 16,300 | 22,900 | 22,000 | 20,600 |
| Hog-dairy | 160 | 10,900 | 19,500 | 24,800 | 25,400 | 23,800 |
| Dairy farms: | | | | | | |
| Western Wisconsin | 139 | 6,000 | 9,900 | 12,000 | 11,700 | 11,000 |
| Eastern Wisconsin | 123 | 9,300 | 17,200 | 21,000 | 20,400 | 19,100 |
| Central Northeast | 195 | 5,800 | 10,100 | 11,900 | 12,500 | 11,500 |
| Tobacco-livestock: | | | | | | |
| Kentucky Bluegrass | 113 | 8,100 | 15,400 | 20,300 | 19,800 | 18,100 |
| Cotton farms: | | | | | | |
| Southern Piedmont | 162 | 3,700 | 8,900 | 11,200 | 11,500 | 11,000 |
| Delta of Mississippi | 45 | 3,100 | 7,600 | 10,100 | 10,400 | 9,800 |
| High Plains, Texas | 333 | 12,300 | 26,000 | 42,000 | 40,600 | 39,300 |
| High Plains, Texas (irrigated) | 299 | 2/ | 42,800 | 71,800 | 71,800 | 69,100 |
| Black Prairie, Texas | 165 | 8,600 | 14,200 | 20,800 | 20,100 | 19,500 |
| Spring wheat farms (No. Plains): | | | | | | |
| Wheat-corn-livestock | 472 | 9,400 | 17,500 | 23,400 | 23,700 | 22,700 |
| Wheat-small grain-livestock | 670 | 10,700 | 18,100 | 24,500 | 24,600 | 23,700 |
| Winter wheat farms (Pacific N.W.): | | | | | | |
| Wheat-pea | 507 | 33,500 | 88,700 | 113,600 | 110,500 | 105,000 |
| Sheep ranches: | | | | | | |
| Northern Plains | 6,102 | 19,500 | 45,800 | 56,100 | 54,900 | 51,900 |
| Cattle ranches: | | | | | | |
| Northern Plains | 3,990 | 14,000 | 39,100 | 43,500 | 42,500 | 39,500 |
| Intermountain region | 1,685 | 15,000 | 27,800 | 30,700 | 30,300 | 28,600 |

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1/ Average per farm in 1952.
2/ Not available.

As the average farmer attaining ownership for the first time is seldom able to pay all cash for a farm, it is of interest to consider the average down payment and annual debt payment that would be required to purchase farms of the size and type indicated. For purposes of illustration, it is assumed that the down payment would be 50 percent of the purchase price and that the mortgage debt would be amortized in equal annual installments over a period of 20 years, with an interest rate of $4\frac{1}{2}$ percent. Table 6 shows the approximate amounts that would be required in 1937-41, 1952 and 1954 for the down payment and the annual debt servicing cost under these assumptions.

With the long-term upward trend in farm real estate values apparently checked, it is even more important now than when values were increasing for prospective buyers to appraise a farm in terms of its debt paying capacity and to arrange for long-term financing wherever possible. For those farmers who are able to make a down payment of as much as half of the purchase price, the prospect of some further decline in real estate prices should not discourage the purchase of land needed to make an efficient operating unit. But the prospective buyer needs to assure himself that the additional land will add to production efficiency and to net income under prospective price-cost relationships. Tenants who are able to make a substantial down payment on the purchase of a productive farm and who cannot continue to rent a farm of comparable income capacity may find little advantage in delaying the step toward ownership, even though some saving in the initial cost of a farm might result from waiting.

As to how much a farmer can afford to pay for a farm depends largely on the income he can derive over the long term from his operations of the farm. Many factors such as price-cost relationships, management ability, size, efficiency, crop and livestock loss hazards, and so on determine income. Farm incomes have been relatively high in recent years. Table 7 shows what net farm income for each of several important types of farms was in 1952 and what it was for slightly smaller farms of similar types in 1937-41 and in 1947-49. Present values are not high in relation to farm incomes and prices of farm products in recent years. (Compare data in tables 5, 6, and 7 and figures 6 and 7, and see map for location of areas).

Rental Rates: Cash rents for farms may decline slightly in 1954 from the peak levels of recent years, largely because of lower returns from the farm products produced in areas where cash renting is common. Cash rents for hay and pasture lands also are likely to average a little lower because of the effects of the drought in 1953. However, the bulk of rental payments is in the form of a share of the crop produced and rental shares change slowly. Year-to-year changes in crop share rents are largely a reflection of yields and prices. With acreage allotments in effect for cotton, corn and wheat, the total value of crop share rents is likely to be less than in 1953.

Table 6.- Cost of farm real estate bought on credit, by type and size of commercial family-operated farm, 1954 with comparisons 1/

| Location and type of farm | Average 1937-41: Down payment | Average 1937-41: Annual instal-ments | 1952: Down payment | 1952: Annual instal-ments | 1954: Down payment | 1954: Annual instal-ments |
|---|---|---|---|---|---|---|
| | Dollars 2/ | Dollars 3/ | Dollars 2/ | Dollars 3/ | Dollars 2/ | Dollars 3/ |
| Corn Belt farms: | | | | | | |
| Cash grain | 13,450 | 1,036 | 38,500 | 2,965 | 32,150 | 2,47 |
| Hog-beef fattening | 7,750 | 597 | 18,600 | 1,432 | 17,050 | 1,31 |
| Hog-beef raising | 4,250 | 327 | 11,450 | 882 | 10,300 | 79 |
| Hog-dairy | 5,450 | 420 | 12,400 | 955 | 11,900 | 91 |
| Dairy farms: | | | | | | |
| Western Wisconsin | 3,000 | 231 | 6,000 | 462 | 5,500 | 42 |
| Eastern Wisconsin | 4,650 | 358 | 10,500 | 809 | 9,550 | 73 |
| Central Northeast | 2,900 | 223 | 5,950 | 458 | 5,750 | 44 |
| Tobacco-livestock: | | | | | | |
| Kentucky Bluegrass | 4,050 | 312 | 10,150 | 782 | 9,050 | 69 |
| Cotton farms: | | | | | | |
| Southern Piedmont | 1,850 | 142 | 5,600 | 431 | 5,500 | 42 |
| Delta of Mississippi | 1,550 | 119 | 5,050 | 389 | 4,900 | 37 |
| High Plains, Texas | 6,150 | 474 | 21,000 | 1,617 | 19,650 | 1,51 |
| High Plains, Texas (irrigated) | 4/ | 4/ | 35,900 | 2,764 | 34,550 | 2,66 |
| Black Prairie, Texas | 4,300 | 331 | 10,400 | 801 | 9,750 | 75 |
| Spring wheat farms (No. Plains): | | | | | | |
| Wheat-corn-livestock | 4,700 | 362 | 11,700 | 901 | 11,350 | 87 |
| Wheat-small grain-livestock | 5,350 | 412 | 12,250 | 943 | 11,850 | 91 |
| Winter wheat farms (Pacific N.W.): | | | | | | |
| Wheat-pea | 16,750 | 1,290 | 56,800 | 4,374 | 52,500 | 4,04 |
| Sheep ranches: | | | | | | |
| Northern Plains | 9,750 | 751 | 28,050 | 2,160 | 25,950 | 1,99 |
| Cattle ranches: | | | | | | |
| Northern Plains | 7,000 | 539 | 21,750 | 1,675 | 19,750 | 1,52 |
| Intermountain region | 7,500 | 578 | 15,350 | 1,182 | 14,300 | 1,10 |

---

1/ Data apply to average sizes of farms in 1952 shown in table 5.

2/ Assumed to be 50 percent of the market value.

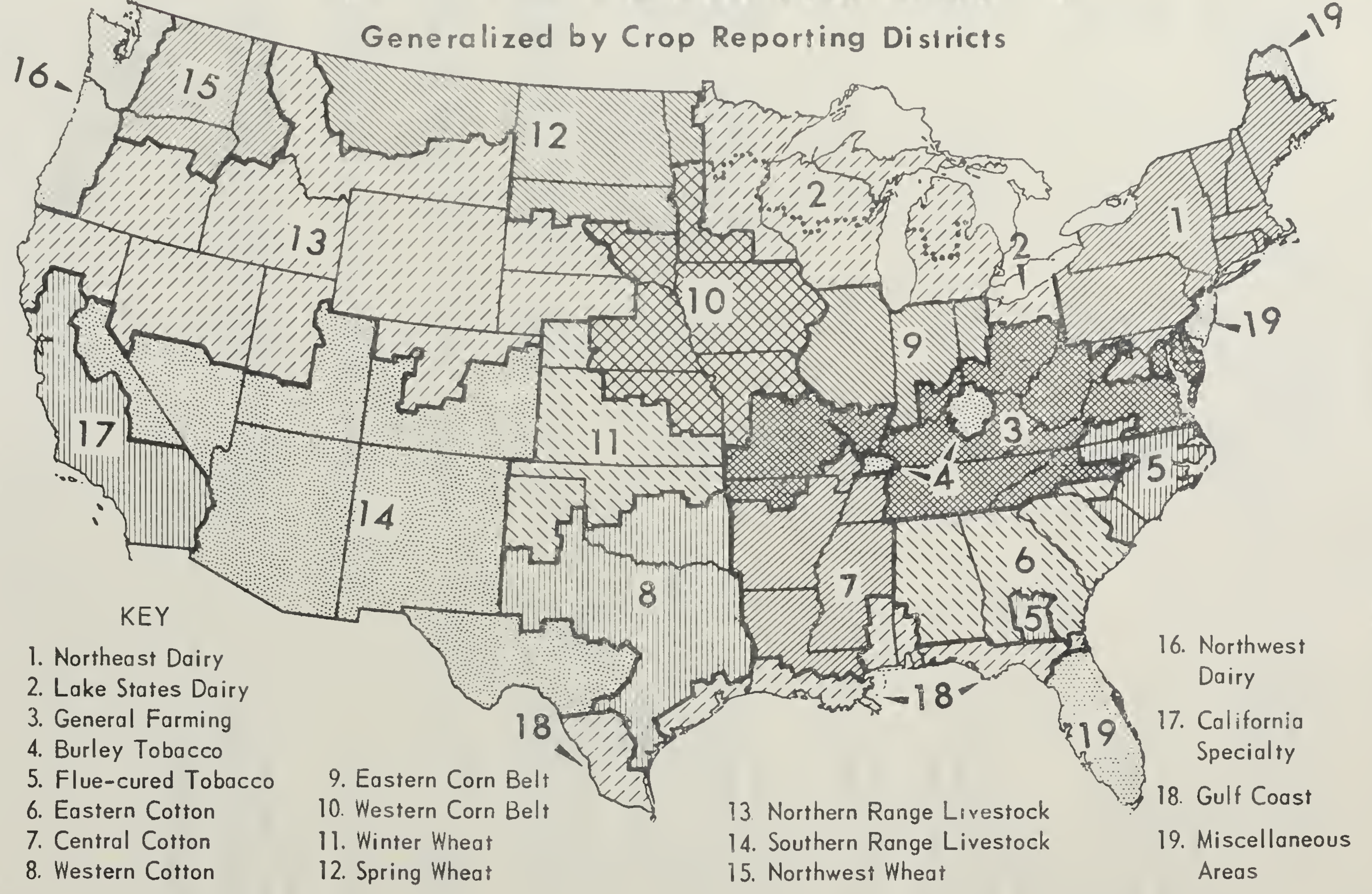
3/ Under standard 20-year annual payment amortization plan at 4 1/2 percent interest.

4/ Not available.

Table 7.- Net farm income by type and size of commercial family-operated farm, 1952 with comparisons

| Location and type of farm | Acres per farm |  |  | Net farm income |  |  |
|---|---|---|---|---|---|---|
|  | Average |  | 1952 | Average |  | 1952 |
|  | 1937-41 | 1947-49 |  | 1937-41 | 1947-49 |  |
|  | Number | Number | Number | Dollars | Dollars | Dollars |
| Corn Belt farms: |  |  |  |  |  |  |
| Cash grain | 209 | 222 | 224 | 2,656 | 9,032 | 10,459 |
| Hog-beef fattening | 178 | 192 | 196 | 2,519 | 10,666 | 8,721 |
| Hog-beef raising | 181 | 204 | 212 | 948 | 3,618 | 4,339 |
| Hog-dairy | 155 | 158 | 160 | 2,154 | 5,396 | 6,199 |
| Dairy farms: |  |  |  |  |  |  |
| Western Wisconsin | 130 | 136 | 139 | 1,242 | 3,290 | 3,925 |
| Eastern Wisconsin | 115 | 120 | 123 | 1,521 | 4,350 | 4,711 |
| Central Northeast | 176 | 189 | 195 | 960 | 3,892 | 3,782 |
| Tobacco-livestock: |  |  |  |  |  |  |
| Kentucky Bluegrass | 110 | 113 | 113 | 1,192 | 3,334 | 3,975 |
| Cotton farms: |  |  |  |  |  |  |
| Southern Piedmont | 158 | 161 | 162 | 494 | 1,565 | 1,442 |
| Delta of Mississippi | 42 | 45 | 45 | 1,023 | 2,839 | 3,146 |
| High Plains, Texas | 258 | 309 | 333 | 1,675 | 6,445 | 5,632 |
| High Plains, Texas (irrigated) | 1/ | 271 | 299 | 1/ | 10,725 | 11,580 |
| Black Prairie, Texas | 140 | 157 | 165 | 1,052 | 3,177 | 3,323 |
| Spring wheat farms (No. Plains): |  |  |  |  |  |  |
| Wheat-corn-livestock | 427 | 460 | 472 | 1,035 | 5,850 | 2,439 |
| Wheat-small grain-livestock | 497 | 621 | 670 | 872 | 6,323 | 3,616 |
| Winter wheat farms(Pacific N.W.): |  |  |  |  |  |  |
| Wheat-pea | 416 | 481 | 507 | 2,766 | 11,861 | 14,033 |
| Sheep ranches: |  |  |  |  |  |  |
| Northern Plains | 4,721 | 5,119 | 6,102 | 2,734 | 6,908 | 5,970 |
| Cattle ranches: |  |  |  |  |  |  |
| Northern Plains | 3,322 | 3,800 | 3,990 | 980 | 6,466 | 5,942 |
| Intermountain region | 1,573 | 1,615 | 1,685 | 2,843 | 9,159 | 10,796 |

1/ Not available.



TYPES OF FARMING AREAS

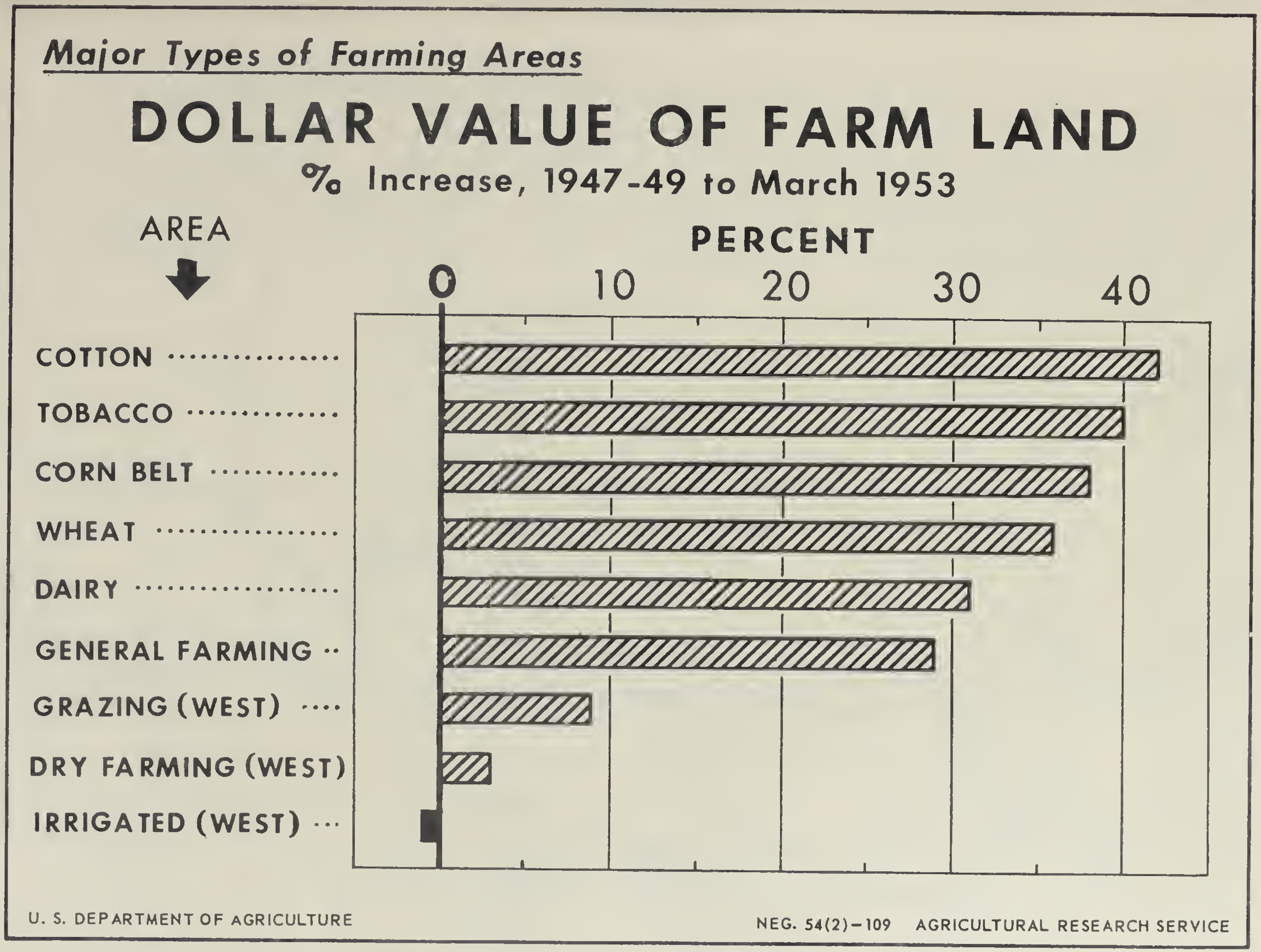
Generalized by Crop Reporting Districts

KEY

1. Northeast Dairy
2. Lake States Dairy
3. General Farming
4. Burley Tobacco
5. Flue-cured Tobacco
6. Eastern Cotton
7. Central Cotton
8. Western Cotton
9. Eastern Corn Belt
10. Western Corn Belt
11. Winter Wheat
12. Spring Wheat
13. Northern Range Livestock
14. Southern Range Livestock
15. Northwest Wheat
16. Northwest Dairy
17. California Specialty
18. Gulf Coast
19. Miscellaneous Areas

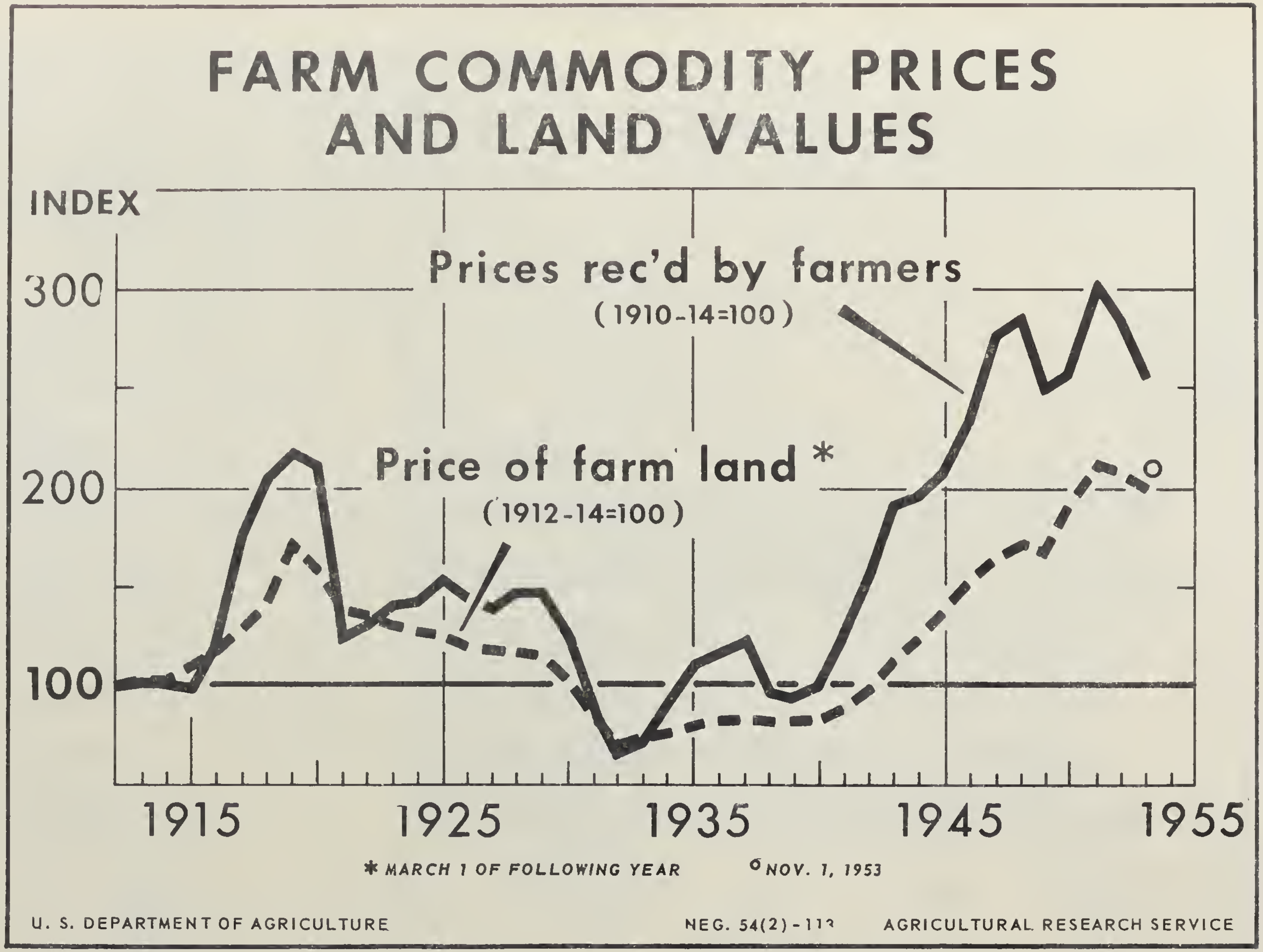
U. S. DEPARTMENT OF AGRICULTURE

NEG. 54(2)-110 AGRICULTURAL RESEARCH SERVICE



Although farm land values in the country as a whole on March, 1953 averaged 27 percent higher than in 1947-49, some significant differences in the amount of increase since that period are apparent from area to area. In general, values had risen more in the eastern two thirds of the country than in the West. The cotton and tobacco areas showed the largest increase, 42 and 40 percent, respectively, followed closely by the corn and wheat areas. In the West, the value of grazing and dry farming land was only slightly higher than in 1947-49, while the value of irrigated land averaged a little lower. (See map for location of areas)

FIGURE 6



Farm land values tend to follow the major up and downswings in farm commodity prices but usually do not change as much. Thus, commodity prices rose 119 percent between 1915 and 1919 and land values increased 57 percent, or about half as much. About the same relationship prevailed between 1940 and 1948 when commodity prices increased 187 percent and land values increased 107 percent. Although minor changes in commodity prices are usually not too important in affecting real estate values, the post-Korean period was an exception. Commodity prices rose 21 percent from 1949 to 1951, but land values increased 26 percent. Apparently, the sharp increase in land values during this period was based to considerable extent on anticipated returns.

FIGURE 7

## Interest, Taxes, and Insurance

Non-Real-Estate Credit - Interest charges on non-real-estate debt of farmers, excluding loans made or guaranteed by the Commodity Credit Corporation, are expected to be 5 to 10 percent lower in 1954 than in 1953. This will result mainly from a decline in the amount of credit used. During 1953 non-real-estate debt of farmers decreased about 10 percent and this trend is expected to continue in 1954 but at a slower rate. Interest rates will probably not change much.

The main cause, so far, of the decline in use of short-term credit and the resulting decline in non-real-estate debt has been the drop in livestock prices. As a result, such debt has declined more in the Midwestern and Western regions than elsewhere. Lower farm incomes, which have caused farmers to be more conservative, and a refinancing with long-term mortgages are other factors tending to reduce the use of this kind of credit. This cautious attitude may continue to be an important factor throughout 1954. It is probable that increasing amounts of non-real-estate debt will be refinanced with long-term farm mortgages.

Changes in the volume of non-real-estate credit used by farmers in 1954 probably will vary by regions. Those who produce wheat and cotton probably will reduce their use of credit more than other farmers because of acreage allotments and marketing quotas resulting in less direct outlay for specified crops. Livestock ranchers have already reduced their use of credit and may use less credit in 1954 than in 1953. On the other hand, cattle feeders may use more in 1954.

Average amounts of credit used by farmers are roughly proportionate to the size and value of their farm enterprises. Among borrowers of the production credit association, a loan of $40,000 is not exceptional for a rancher in the Northwest whereas loans of $1,000 or less are common among family-size tobacco and cotton growers. Because of such differences the savings in interest costs in 1954 will vary widely among individual farmers. For a rancher who borrows $40,000, a 10 percent decrease in credit used might result in savings in interest costs exceeding $200; for a farmer who borrows only $1,000, and that for only part of the year, the savings probably would not exceed $5 or $6.

Mortgage Interest Payments - Increasing farm-mortgage (real estate) debt will result in larger interest charges in 1954. Total interest charges on farm-mortgage debt this year probably will be about $380 million compared with a little less than $350 million in 1953. At the beginning of 1954 the total mortgage debt probably was between $7,700 million and $7,800 million, an increase of 8 to 9 percent above the $7,154 million outstanding a year earlier.

The upward movement of interest rates charged on new farm-mortgage loans, which began in 1951, apparently leveled off by early 1953. In March 1953 the average interest rate charged on farm-mortgage loans recorded was 4.97 percent compared with 4.74 percent in March 1951. Farm-mortgage interest rates have been relatively steady in the past year, and little or no change is expected during 1954. Mortgage money appears to have been more plentiful during the last four to six months, and lower interest yields on Government and corporate securities have removed much of the pressure for higher interest rates on farm mortgages.

Farmers apparently have increased their borrowing on real estate for the purpose of refinancing short-term indebtedness and for refinancing real estate mortgages written for short terms. In many cases such refinancing puts the farmer's financial affairs in better order, reduces his annual interest charges, and also reduces his annual principal payments. Lengthening the term of a mortgage from 10 to 20 years, for example, will make a 35 to 40 percent reduction in the annual payments needed to amortize a mortgage (table 8). The increased desire of farmers for longer-term amortized mortgages probably is responsible for the relatively large increase in mortgage loans made by life insurance companies and Federal land banks.

Table 8.- Annual payments required to amortize $1,000 of farm-mortgage indebtedness at various interest rates and terms (standard amortization plan)

| Term | Interest rate per year<br>4.0 pct. | 4.5 pct. | 5.0 pct. | 5.5 pct. | 6.0 pct. |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| 10 years | 123 | 126 | 130 | 133 | 136 |
| 15 years | 90 | 93 | 96 | 100 | 103 |
| 20 years | 74 | 77 | 80 | 84 | 87 |
| 25 years | 64 | 67 | 71 | 75 | 78 |

In 1954 farmers and others borrowing on farm real estate are likely to find mortgage money in fairly good supply with increased competition among lenders for the better types of loans or for loans in the better farming areas. Lenders report that they are putting more emphasis on the operating efficiency and expected income and expenses of prospective borrowers. Farmers with reasonable equities and good repayment prospects probably will experience little difficulty in obtaining mortgage credit. On the other hand, farmers with relatively small equities and relatively poor repayment abilities will find mortgage credit increasingly difficult to obtain.

About 59 percent of all sales of farm real estate involved credit in 1953--the highest percentage of credit financing in 10 years. For those sales involving credit in 1953 the debt incurred averaged about 57 percent of the sales price. This percentage was higher than in 1952 and 1951 and had not been exceeded since 1944.

A comparison of farm sales involving credit from 1951 to 1953 in 5 type-of-farming areas shows that the average value per farm sold, average mortgage debt, and average interest charge on original amount of the mortgage were higher in 1953 than in 1951 (table 9). However, in some areas estimates for 1953 were somewhat under 1952.

Table 9.- Sales of farm real estate involving credit average value, mortgage debt, and interest charge per farm sold, five type-of-farming areas, 1951-53

| Item and year | Type-of-farming areas | | | | |
|---|---|---|---|---|---|
| | Eastern dairy | Western Corn Belt | Spring wheat | Central cotton | Northern range livestock |
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Average value farm sold: | | | | | |
| 1951 -------------- | 16,400 | 23,000 | 15,200 | 19,700 | 32,100 |
| 1952 -------------- | 15,400 | 24,700 | 21,400 | 27,300 | 36,000 |
| 1953 -------------- | 18,100 | 25,000 | 21,100 | 25,300 | 33,900 |
| Average mortgage debt: | | | | | |
| 1951 -------------- | 9,400 | 11,400 | 8,900 | 11,300 | 18,800 |
| 1952 -------------- | 8,700 | 12,200 | 13,000 | 16,100 | 20,700 |
| 1953 -------------- | 10,700 | 12,500 | 12,700 | 14,600 | 20,300 |
| Average interest charge: 1/ ---------- | | | | | |
| 1951 --------------- | 450 | 470 | 440 | 610 | 920 |
| 1952 -------------- | 430 | 520 | 640 | 890 | 1,030 |
| 1953 -------------- | 550 | 550 | 620 | 820 | 1,030 |
| Annual payment (principal and interest) 20-year amortized loan (assumed interest rate) 2/ | (5.0 pct.) | (4.5 pct.) | (5.0 pct.) | (5.5 pct.) | (5.0 pct.) |
| 1951 --------------- | 750 | 880 | 710 | 950 | 1,510 |
| 1952 -------------- | 700 | 940 | 1,040 | 1,350 | 1,660 |
| 1953 -------------- | 860 | 960 | 1,020 | 1,220 | 1,630 |

---

1/ Annual interest charge on original amount of farm mortgage at average interest rates charged on all new farm-mortgage loans.

2/ Assumed interest rates for amortization calculations do not correspond exactly to average interest rates charged on new farm-mortgage loans in specified areas and years.

In the western Corn Belt, for example, the average value of farms purchased on credit sales rose from $23,000 per farm in 1951 to $25,000 in 1953. The average mortgage increased from $11,400 in 1951 to $12,500 in 1953, and the corresponding estimated annual interest charge on the original amount of the mortgage increased from $470 to $550 (table 9). If the average mortgage indebtedness resulting from these farm real estate sales were financed at 4.5 percent and amortized over a 20-year period, the annual payments of principal and interest in 1953 would average $960 per farm compared with $880 in 1951, an increase of nearly 9 percent.

These annual payments may be more difficult for farmers to meet in 1954 because in some areas average net farm income may be slightly lower than in 1953. Net farm incomes in 1953 averaged lower than in 1952 and 1951. However, farm loan delinquencies are expected to continue very low with farmers generally meeting their scheduled mortgage interest and principal payments on time.

Taxes - Preliminary reports indicate that State and local taxes on farm real estate are continuing their upward trend. These taxes, levied in 1953 and payable largely in 1954, are expected to increase by 4 to 5 percent. Higher real estate taxes are expected in all but a few States.

A slight decline is expected in taxes levied on farm personal property throughout the country. The net effect probably will be a decrease of about 3 percent in the average farmer's property tax bill.

On a typical 160-acre hog-dairy farm in the Corn Belt, for example, taxes on real estate payable in 1953 were $330. An increase to about $340 is expected for 1954. Personal property taxes levied in 1953, payable largely in 1954, amounted to $148. The latter represents a slight decrease from the amount that would have been payable on the same property a year earlier.

Federal income tax liabilities of farmers on 1953 income are expected to show a decrease of about 10 percent from those on 1952 income. The drop is a result of lower net farm income, as Federal income tax rates were unchanged during 1953. The lower Federal income tax rates that became effective January 1, 1954 are expected to bring a further reduction in farmers' tax liabilities. For example, a farmer with a wife and two dependents, and having a net income (before exemptions) of $4,500 will owe $420 in Federal income tax payments in 1954 compared with $466 payable on the same income earned during 1953.

Insurance - Premiums and assessments paid by farmers to farm mutual insurance companies probably will increase by about 10 percent in 1954. Most policies are for 5-year terms and, when renewed in a period of rising replacement costs, the tendency is for the amounts of insurance to be increased so as to more nearly cover current valuations. As the rates charged by farm mutuals are not expected to increase, on the average (except for windstorm insurance), most of the increase in insurance costs of farmers will be due to the increased coverages.

If the buildings, machinery and equipment, livestock, and stored crops on 20 important types of commercial family-operated farms in several important type-of-farming areas had been insured against fire (and lightning) damage up to 75 percent of value in 1952, at average farm mutual rates for the respective areas, the average cost would have been about $50 per farm. The insurance on these 20 types of farms in 1954 probably would range from a low of less than $6,000 on Piedmont cotton farms to a high of around $70,000 on sheep ranches in the Intermountain region. The average insurance per farm probably would be about $27,000. The annual cost per farm probably would range from a low of a little over $28 on Piedmont cotton farms to a high of about $183 on Intermountain sheep ranches. The cost per $100 of insurance is approximately 26 cents in the Intermountain region compared with about 51 cents in the Piedmont area.

For the farm mutuals in the States in which these representative farms are located, the cost of insurance averaged about 21.6 cents per $100 of insurance in 1952, compared with 23.0 cents for the United States as a whole. Costs per $100 of insurance in 1954 will not differ much from those in 1952.

The safety funds or reserves for 1,777 farm mutuals, countrywide, averaged 50.7 cents per $100 of insurance in force at the end of 1952. These reserves may be drawn upon in the years of heavy losses, thus helping to stabilize farmers' assessment rates.

## Cost Reduction Opportunities in Egg Production

During the last 20 years improvements in the efficiency of producing eggs and poultry meat have been among the more notable achievements in agriculture. From the early 1930's to 1953 egg production per layer has increased from 120 eggs annually to 181--an increase of 50 percent [1]. It takes less feed, labor, housing and other production facilities to keep 2 layers than would be required for 3 layers even though the increased production of eggs has brought some increase in the feed consumption per bird.

In commercial egg production the rate of lay is one of the most important factors in obtaining profits. These farms frequently produce 200 or more eggs per layer. Under price-cost conditions during recent years it is estimated that a production of at least 150 eggs per layer per year would be required to break even on such farms. Cost of feed is the largest item of expense and one on which it does not pay to skimp. It probably requires 100 to 120 eggs for most layers just to pay the cost of feed. Compared with other classes of livestock this is a relatively high output needed before profits begin to show up.

The chief reason for the high feed consumption by layers is the large proportion of the total feed used for maintenance. At the 150-egg level approximately 75 percent of the feed is needed for this purpose. Feed used for maintenance is quite constant, varying mostly with the weight of the layer. It drops proportionately as the hen increases her total feed used to produce more eggs. Experimental results indicate that a reduction in the feed provided for laying hens, producing at their highest capacity, reduces egg production roughly twice as much percentage-wise as the decrease made in feed. It is clear, therefore, that it does not pay to economize on feed if a high return is expected from the laying flock.

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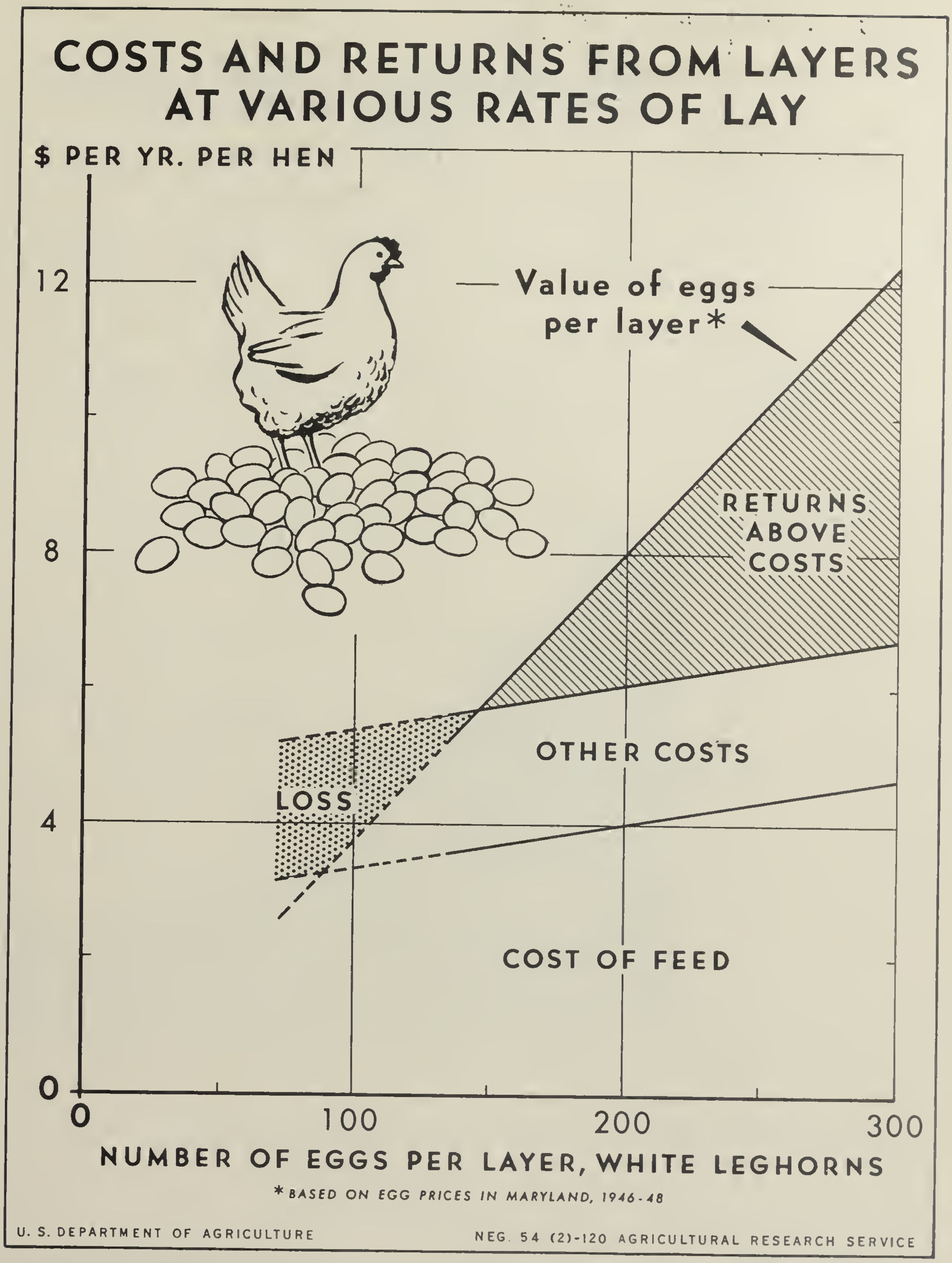
[1] Rate of lay here is number of eggs laid per year divided by the average number of layers during the year.

High production per layer is the best way to obtain profits or reduce losses whether feed costs are high or egg prices are low. Figure 8 shows the importance of high production in obtaining large net returns. The increase in total income is usually larger than the increase in expense. With higher output a larger proportion of eggs is produced during the part of the year when prices are seasonally high because above average layers usually extend their laying period into the season when eggs are relatively high in price.

Figure 8 illustrates how the returns per layer go up as the rate of lay increases from 150 to 300 eggs. It is necessary to get a production per layer of more than 150 eggs before the net returns to commercial egg producers reach a significant level. Feed cost shows a comparatively small increase with the increased egg production; other costs, which include labor, remain almost constant. In periods of low returns, poultry farmers will not improve their returns by reducing the quality or amount of feed. The use of high-producing strains of chickens together with improved management, including culling of unproductive layers, is the best way to insure higher profits from the laying flock.



High feed costs, primarily due to the large quantity of feed used for maintenance, makes it necessary to obtain a production per layer in excess of 150 eggs annually before net returns to commercial poultry farmers reach a significant level. Returns above this break-even point increase far more rapidly than costs.

FIGURE 8

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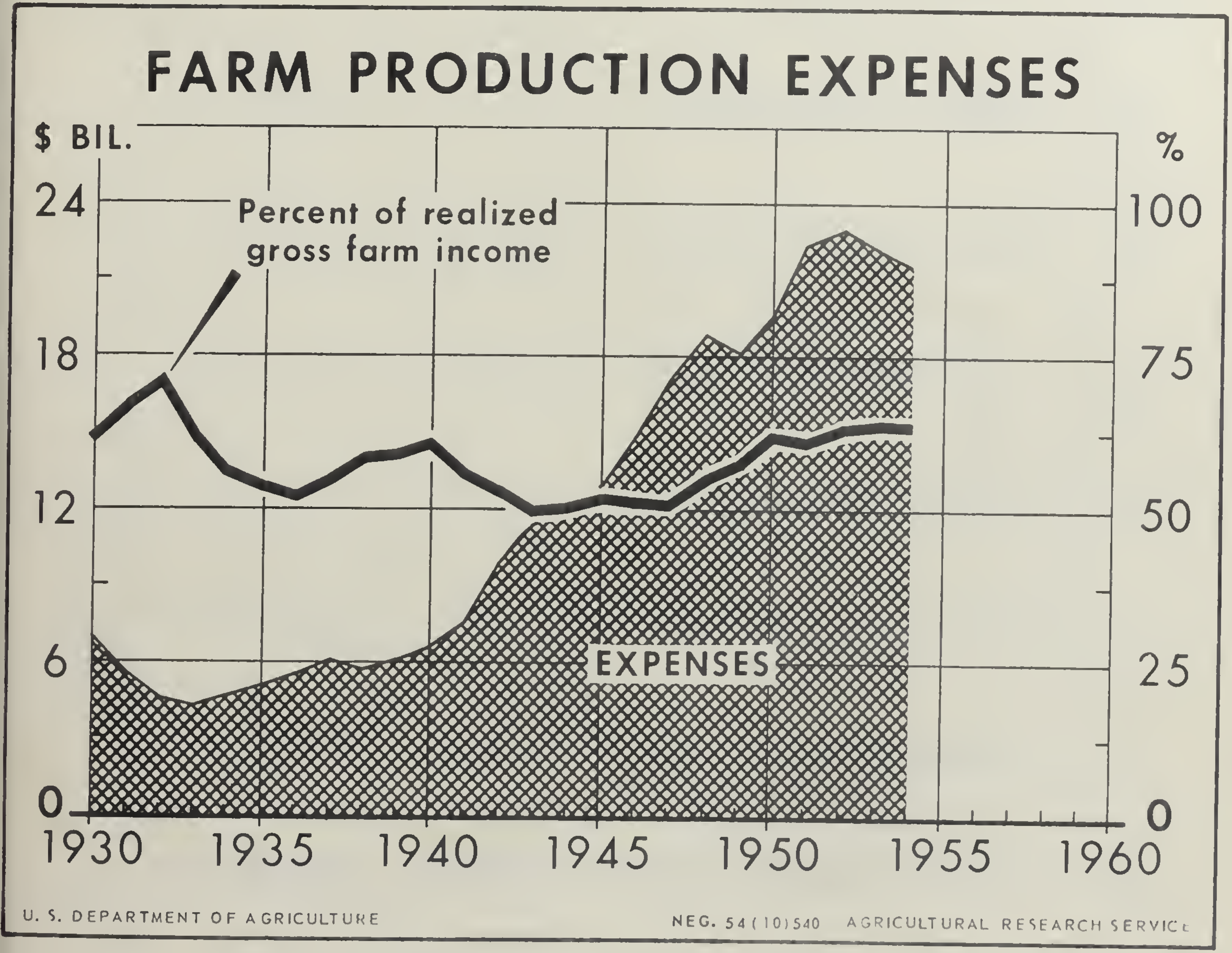

U. S. DEPARTMENT OF AGRICULTURE NEG. 54(10)540 AGRICULTURAL RESEARCH SERVICE

Farm production expenses in the United States increased from about $6 billion in 1939 to a peak of about $23 billion in 1952. Three reasons largely accounted for this increase: (1) Prices increased, (2) farm output expanded, and (3) farmers became more dependent upon industrial products in their farming operations. The decline in farm production expenses since 1952 has been due mainly to reductions in prices paid by farmers for items that are mainly farm-produced, such as livestock, feed and seed. During the last 25 years expenses of farm production have accounted for a fairly high percentage of realized gross income. The percentage was highest in 1932 when prices received for farm products were extremely low. Since 1947 the trend has been upward. In recent years the use of more nonfarm inputs has been an important factor.

Goods and services used in production: Prices paid by farmers and farm wage rates, United States

Index numbers (1935-39 = 100)

| Year | Commodities, interest, taxes and wage rates 1/ | Commodities only | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates 2/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910-14 | 79 | 80 | 95 | 81 | --- | --- | 65 | 71 | 69 | 98 | 84 | 82 |
| 1915-19 | 118 | 121 | 149 | 123 | --- | --- | 85 | 117 | 97 | 141 | 127 | 122 |
| 1920-24 | 131 | 117 | 133 | 94 | --- | --- | 101 | 130 | 116 | 141 | 124 | 149 |
| 1925-29 | 131 | 116 | 127 | 123 | 127 | 89 | 101 | 123 | 111 | 129 | 123 | 152 |
| 1930-34 | 101 | 90 | 85 | 71 | 99 | 89 | 95 | 103 | 96 | 106 | 81 | 100 |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 121 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 156 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 192 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 204 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 210 | 198 | 200 | 324 | 143 | 199 | 180 | 176 | 215 | 141 | 193 | 351 |
| 1951 | 232 | 220 | 225 | 395 | 150 | 212 | 194 | 189 | 239 | 149 | 197 | 388 |
| 1952 | 237 | 221 | 239 | 331 | 151 | 222 | 201 | 200 | 240 | 153 | 223 | 416 |
| 1953 | 227 | 204 | 216 | 234 | 154 | 221 | 203 | 201 | 241 | 154 | 205 | 424 |
| Aug. | 224 | 200 | 211 | 214 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 223 | 199 | 210 | 210 | 156 | 219 | 204 | 199 | 240 | 154 | 197 | --- |
| Oct. | 222 | 198 | 206 | 208 | --- | --- | --- | --- | --- | --- | --- | 426 |
| Nov. | 224 | 200 | 204 | 223 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 225 | 202 | 210 | 223 | 157 | 223 | 204 | 202 | 241 | --- | --- | --- |
| 1954 | | | | | | | | | | | | |
| Jan. | 230 | 205 | 212 | 251 | --- | 224 | --- | --- | --- | --- | --- | 434 |
| Feb. | 230 | 206 | 214 | 251 | --- | --- | --- | --- | --- | --- | 192 | --- |
| Mar. | 230 | 206 | 217 | 249 | 158 | 222 | 205 | 198 | 240 | 152 | 192 | --- |
| Apr. | 229 | 206 | 220 | 253 | --- | --- | --- | 196 | --- | 151 | 192 | 419 |
| May | 229 | 206 | 222 | 252 | --- | --- | --- | --- | --- | --- | 194 | --- |
| June | 227 | 203 | 216 | 236 | 156 | 222 | 205 | 194 | 239 | --- | --- | --- |
| July | 224 | 199 | 213 | 210 | --- | 221 | --- | --- | --- | --- | --- | 417 |
| Aug. | 225 | 202 | 215 | 224 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 226 | 202 | 215 | 231 | --- | --- | --- | --- | --- | 152 | 190 | --- |

1/ Revised to reflect revisions in interest and tax indexes. 2/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices," Agricultural Marketing Service, September 30, 1954.

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# THE FARM COST SITUATION

Approved by Outlook and Situation Board, October 18, 1954

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## GENERAL SITUATION

Total farm production expenses in the United States are slightly lower this year than they were in 1953. The 1955 outlook is for some further slight decline in farm production expenses. Nevertheless farm production expenses will be more than three times as high in 1955 as in 1940.

Farm cost rates changed little from 1953 to 1954. Wage rates and prices of seed, fertilizer, and farm supplies were down slightly. Prices of feed and building materials averaged about the same. Those of livestock and motor supplies were a little higher. List prices for farm machinery were up slightly, but frequently somewhat larger discounts and trade-ins were available.

Farm cost rates expected in 1955 relative to 1954 are as follows:

Farm wage rates and interest rates--slightly lower.

Seed, and feeder and replacement livestock--slightly lower.

Motor fuel, building and fencing materials, feed and fertilizer--about the same.

Farm machinery--about the same, discounts remaining substantial.

Taxes per acre, and tires--slightly higher.

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Since 1952, when expenses reached their peak, prices of farm-produced expense items such as feed, seed, and livestock have moved down. Interest rates and taxes have increased slightly. Factory-produced cost items have changed little or have moved up. With business conditions at a reasonably high level, there seems little reason to expect significant price declines in industrial items next year.

In 1954, the drought, the drop in acreage of cotton with substitution in many areas of less intensive crops, and, to some extent, the decline in acreage of wheat have tended to reduce total expenditures made for certain items, such as machinery operating costs and marketing charges.

Farm capital expenditures for new machinery and buildings declined materially this year. The 1954 output of farm machinery, for example, was about a third below that of 1951. But the value of machinery and buildings on farms was at an all-time high. Consequently, depreciation costs were about the same as in 1953. Expenditures for other items changed relatively little from 1953 to 1954.

The cash cost of farming has increased substantially in recent years. Farm production expenses of U. S. farm operators will be approximately $4.4 billion or about a fourth higher this year than in 1947 (table 1). The increasing use together with higher prices of goods and services produced off the farm is largely responsible for this increase in total farm production expenses.

Requirements of commercial agriculture are expected to cause total production expenditures to remain high in 1955. Although lower incomes have encouraged and will continue to encourage farmers to watch their expenditures carefully, many who plan to adjust their operations to bring about lower costs over a period of years will need to continue a reasonably high level of investment for the next few years.

Prospective cost changes for the next year are always of interest. But it should be recognized that for most farmers this is frequently not the nub of the question. Farmers who buy machinery, for example, are thinking about the next 5 to 10 years. Decisions concerning the hiring of labor frequently are knit into a production plan which extends over a number of years. These changes in farm plans often lag behind changes in current economic conditions. Consequently, the interest of farmers frequently centers on how cost relationships have changed over a period of years; whether they are likely to change back, and what adjustments to technological developments appear to be desirable.

Relationships among the cost rates of major items used in production have changed considerably since 1935-39. Farm wage rates, for example, have increased by more than 300 percent while fertilizer prices have increased only 50 percent (fig. 1). Most of the changes in relationships between important cost rates took place during World War II. Since 1947 relative changes have been much less significant (fig. 2).

Prospective changes in 1955 are relatively small. While some further adjustments during the next few years may be expected, a return to the prewar cost rate relationships appears unlikely. On balance, trends toward the use of more nonfarm inputs and increased output per farm worker are likely to continue during the next 5 to 10 years (fig. 3).

The particular items of cost that concern farmers, vary greatly by area and type of farm. On wheat-livestock farms in the northern Plains, for example, power and machinery make up nearly two-thirds of total operating expense. Adjustments in use of power and machinery and of diverted acres can materially affect cost per unit of product on many farms.

In the northeastern dairy areas feed accounts for more than a third of the production expenses. Hired labor is important, especially on the larger farms. Cost reduction opportunities on these farms center to a considerable extent around making better use of improved technology in the growing and harvesting of feed and in use of labor.

On Piedmont cotton farms machinery, fertilizer, and hired labor are important cost items. Better use of land taken out of cotton offers opportunity to improve efficiency in the next few years.

In all areas decisions farmers make with respect to farming practices in any one year may affect production costs for a number of years. With increased use of power and machinery and other technologies requiring heavy investments, long-range farm planning becomes more and more important.

Table 1.- Production expenses of farm operators, United States, 1946-54

| Year | Machinery, buildings, fertilizer, taxes, interest, and miscellaneous 1/ | Hired labor | Feed, seed, and livestock | Total production expenses 2/ |
|---|---|---|---|---|
| | Million dollars | Million dollars | Million dollars | Million dollars |
| 1946 | 7,473 | 2,553 | 4,664 | 14,690 |
| 1947 | 8,696 | 2,819 | 5,676 | 17,191 |
| 1948 | 9,645 | 3,029 | 6,212 | 18,886 |
| 1949 | 10,112 | 2,855 | 5,179 | 18,146 |
| 1950 | 10,971 | 2,724 | 5,975 | 19,670 |
| 1951 | 12,366 | 2,920 | 7,084 | 22,370 |
| 1952 3/ | 13,123 | 2,996 | 7,064 | 23,183 |
| 1953 | 13,303 | 3,052 | 5,775 | 22,130 |
| 1954 4/ | 12,700 | 3,000 | 5,900 | 21,600 |

1/ Depreciation rather than the amount invested is used in determining machinery and building expenses.

2/ Excluding Government payments to nonfarm landlords.

3/ Revised.

4/ Tentative estimates.

Agricultural Marketing Service.

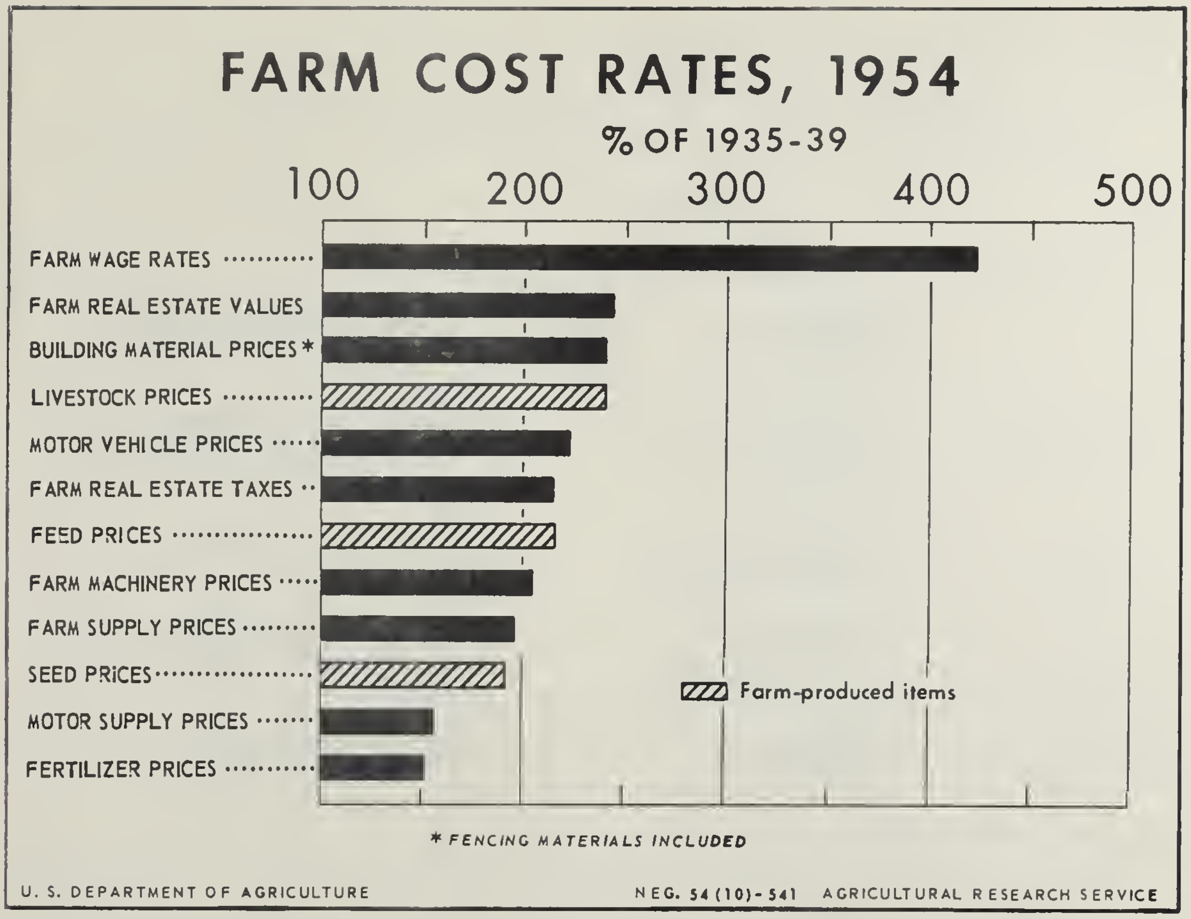

Figure 1

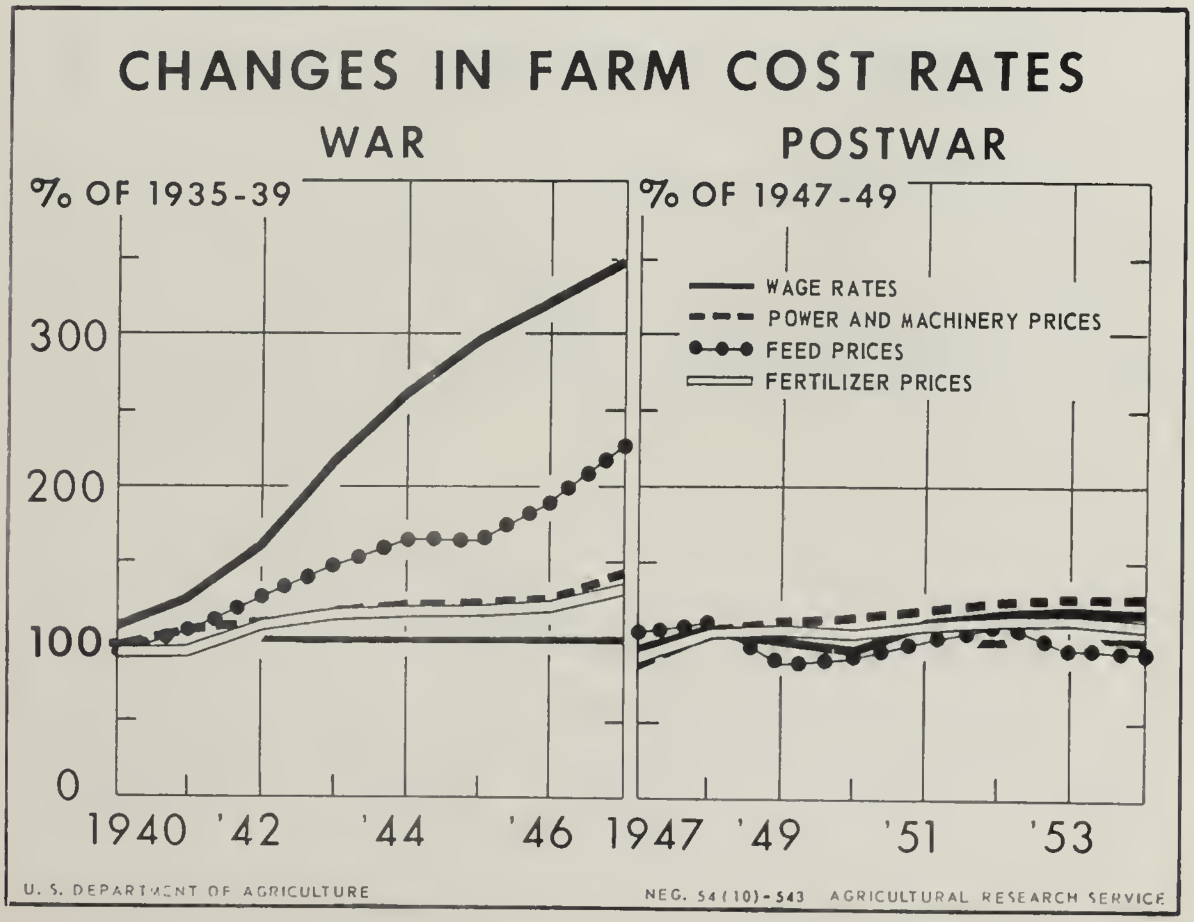

Figure 2

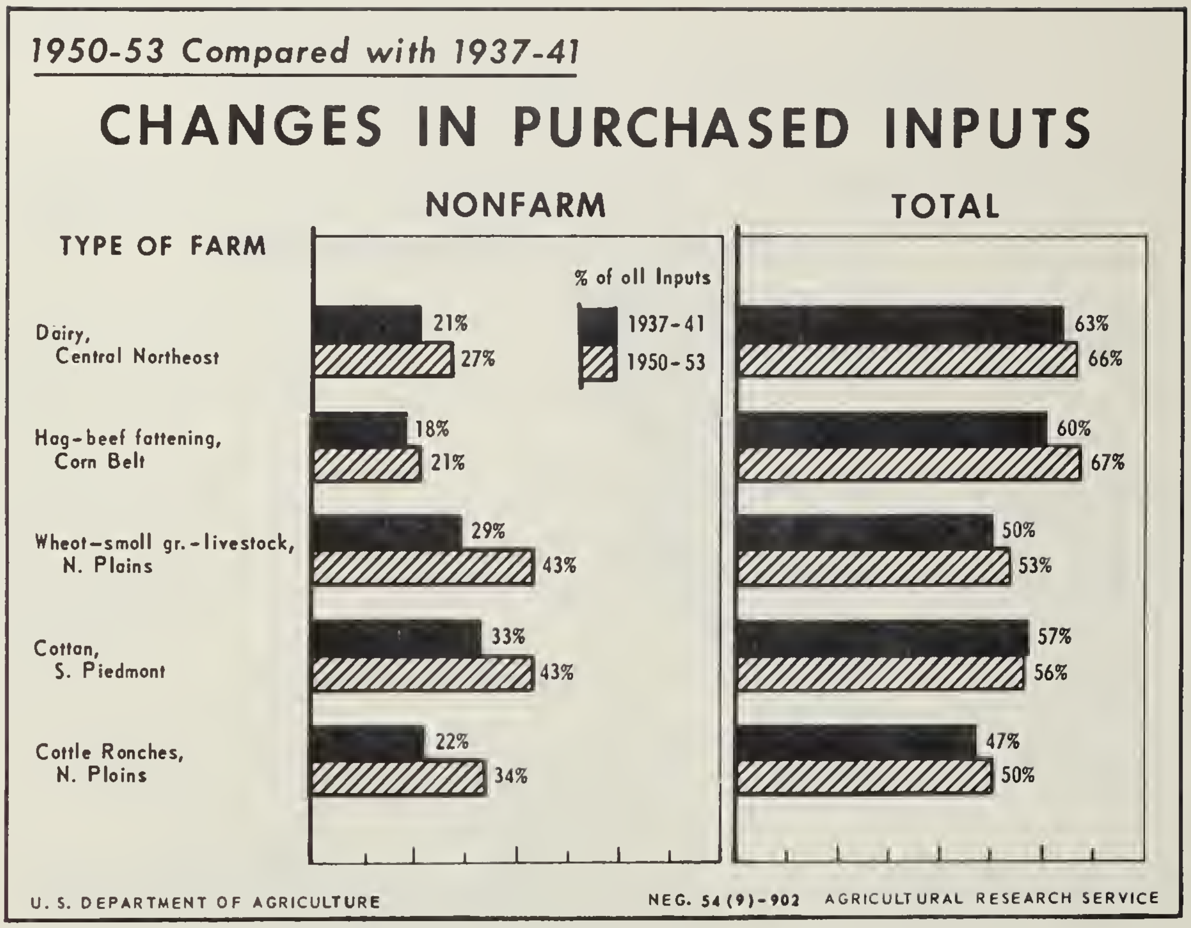

Figure 3

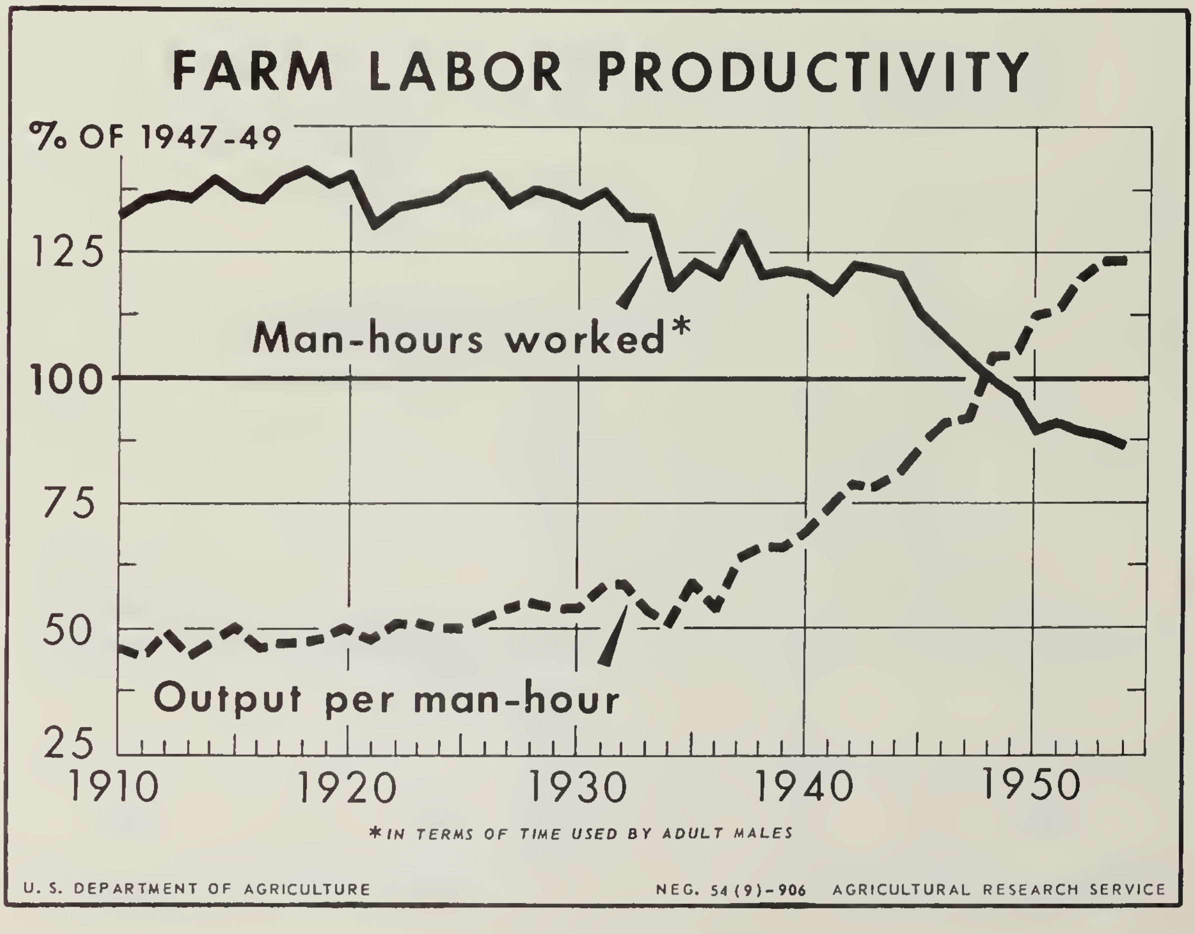

Figure 4

## Farm Labor

Farm wage rates have eased off in recent months (table 2). This has occurred particularly in the South and West. The easier farm labor supply may well continue into 1955. Farm wage rates will probably average slightly less in 1955 than in 1954.

Despite the recent decrease, farm wage rates continue to be higher than cost rates of other farm inputs compared with relationships before World War II. Adjustments on farms that will reduce the amount of labor, per unit of product generally will continue to be profitable. For example, many commercial orchardists who have not already done so might well consider using one of the newer chemical sprays for thinning apples. This will reduce costs of thinning. Additional mechanization of certain farm operations will pare costs per unit over a period of years. In cutting costs, however, each farm is unique in some respect and each adjustment must be considered on an individual farm basis.

The 1954 amendments to the Social Security Act go into effect on January 1, 1955. The new Act extends Old Age and Survivors Insurance to practically all hired farm workers who are paid as much as $100 cash in a year by any one farmer. Under the old law only regularly employed farm workers were covered. The tax rate remains at 2 percent each for employee and employer. In other words, the farmer keeps back 2 percent of the covered hired worker's wages and adds another 2 percent as his share of the tax. The new law also raises the maximum earnings on which the tax is paid from $3,600 to $4,200 a year.

The supply of farm workers generally has been adequate this year to enable farmers to get their work done well and on time. By the middle of September, almost 30 percent of the current cotton crop had been ginned, compared with 18 percent on the same date last year. The advanced progress of cotton picking was affected by the short crop resulting from fewer acres and from lower yields outside the irrigated areas. Droughts were responsible for the drop in yield and the earlier-than-usual maturity. Corn and wheat crops also took fewer man-hours this year and only partly offsetting were the greater labor needs for most other farm enterprises. Consequently, estimated man-hours for all farm work in 1954 are around a half billion, or about 2 percent, less than last year. Preliminary estimates of farm output in 1954 indicate a decrease of about the same proportion, which means that average productivity of farm labor did not improve this year in contrast to most recent years (fig. 4). The total number of farm workers is also down slightly.

Supplies of workers available for farm work next year are expected to continue generally adequate. However, the supply of experienced year-round workers probably will remain tight. With a continuation of some industrial unemployment, the movement of farm workers to industry is not expected to increase. Workers from Puerto Rico are expected to be available and others from Mexico and British West Indies probably will be available if the supply of domestic workers is not adequate. Shifts in acreages of crops next year resulting from allotments, marketing quotas, and other causes in most areas will be to crops and uses that take less labor. This adds assurance that labor stringency will not hinder farm production.

Table 2.- Labor used on farms, labor productivity, wage rates and related data, United States, 1940-54 1/

Index numbers (1947-49=100)

| Period or year | Farm employment |  |  | Man-hours of farm work 3/ | Farm output 4/ | Farm output per man-hour | Gross farm income per man-hour 5/ | Farm wage rates 6/ |
|---|---|---|---|---|---|---|---|---|
|  | Total 2/ | Family 2/ | Hired |  |  |  |  |  |
| 1940 | 107 | 104 | 117 | 120 | 83 | 69 | 28 | 30 |
| 1941 | 104 | 101 | 116 | 117 | 86 | 74 | 35 | 35 |
| 1942 | 103 | 100 | 112 | 122 | 96 | 79 | 46 | 46 |
| 1943 | 102 | 101 | 107 | 121 | 94 | 78 | 56 | 61 |
| 1944 | 100 | 100 | 98 | 120 | 97 | 81 | 60 | 74 |
| 1945 | 98 | 99 | 93 | 112 | 96 | 86 | 68 | 83 |
| 1946 | 101 | 102 | 96 | 108 | 98 | 91 | 81 | 90 |
| 1947 | 102 | 102 | 99 | 103 | 95 | 92 | 99 | 97 |
| 1948 | 101 | 101 | 102 | 100 | 104 | 104 | 103 | 103 |
| 1949 | 97 | 97 | 99 | 97 | 101 | 104 | 98 | 100 |
| 1950 | 91 | 91 | 91 | 89 | 100 | 112 | 108 | 99 |
| 1951 | 88 | 88 | 87 | 91 | 103 | 113 | 122 | 109 |
| 1952 | 85 | 85 | 84 | 89 | 107 | 120 | 122 | 117 |
| 1953 | 84 | 84 | 85 | 88 | 108 | 123 | 119 | 119 |
| 1954 7/ | 83 | 82 | 86 | 86 | 106 | 123 | 119 | 118 |

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1/ Data on farm employment, wage rates, and farm income are from Agricultural Marketing Service.

2/ Includes farm operators and members of their families working without wages.

3/ Total man-hours of farm work in terms of the time required by average adult male workers.

4/ Net calendar-year production for eventual human use.

5/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased at about the same rate as have farm wage rates.

6/ Simple average of seasonally adjusted quarterly indexes.

7/ Preliminary. Estimates of farm output and man-hours for 1954 based on August and September, 1954 "Crop Production" reports and other releases of the Agricultural Estimates Division, Agricultural Marketing Service.

## Farm Power and Machinery

Prices of farm machinery and equipment, excluding automobiles and motortrucks, are about the same as they were on January 1, 1951, and they are expected to continue at about present levels throughout 1955. They are now about double the 1935-39 average prices and about 14 percent above prices prevailing in June 1950, the beginning of the Korean War.

Although retail prices quoted by farm machinery and equipment dealers have changed little since January 1951, many dealers have made price concessions especially in the form of increased allowances for trade-ins. The most liberal discounts have been offered in areas where farm incomes have been low because of drought or other reasons and where inventories in dealers' hands have been unusually high.

Substantial discounts may continue to be offered in 1955 but they may be somewhat smaller in some instances. Farmers' expenditures for new machinery in 1955 will continue to be less than in 1951-53 but output of farm machinery also is expected to be considerably below the level of those years.

Production of farm machinery and equipment was of record volume in 1951, but it has since declined. The 1954 output probably will be about a third below that of 1951. Production in the current year will be small only in relation to the high output of recent years. It will be substantially above the average of the prewar period. With the prospective farm incomes of 1955 it appears likely that farmers will buy about as much farm machinery in 1955 as they bought in 1954.

Although purchases of machinery and equipment by farmers have declined since 1951, they have been in excess of numbers discarded. Numbers of tractors and other important machines on farms continue to increase. Since 1940 numbers of tractors on farms have about tripled. From 1940 to 1954 the annual increase in tractor numbers has approximated 218,000. This is about the same as the yearly increase since January 1, 1952.

Preliminary estimates indicate a total of 2,650,000 motortrucks on farms January 1, 1954. This is about 150 percent above the 1940 number. Numbers of farm automobiles on January 1, 1954, are tentatively estimated at 4,450,000. From 1930 to 1940 numbers of farm automobiles changed very little. Since 1940, they have increased only about 8 percent but during that period there were large reductions in the numbers of farms and farm families.

Retail prices of gasoline in 1954 are higher than for any previous year but they are only about 45 percent above the 1935-39 prices (table 3). Little, if any, change in these prices is expected in the coming year.

Prices of tires in 1954 were moderately below the high 1951 and 1952 prices but they may increase moderately in the near future.

Table 3.- Horses and mules and tractors on farms and cost of keeping horses and mules and of using farm tractors, United States, 1935-39 average and 1940-54 1/ 2/

(Index numbers 1935-39=100)

| Calendar year or period | Tractors on farms, January 1 | Horses and mules on farms, all ages January 1 | Colts under 1 year on farms January 1 | Horses and mules all ages, value per head January 1 | Feed cost per head 3/ | Prices paid by farmers for: New tractors 4/ | Gasoline | Tires 6.00 x 16 |
|---|---|---|---|---|---|---|---|---|
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 124 | 92 | 101 | 90 | 89 | 96 | 95 | 92 |
| 1941 | 135 | 90 | 98 | 81 | 95 | 101 | 99 | 95 |
| 1942 | 152 | 87 | 85 | 78 | 119 | 102 | 103 | 117 |
| 1943 | 169 | 84 | 69 | 95 | 154 | 99 | 103 | 130 |
| 1944 | 178 | 80 | 62 | 98 | 178 | 111 | 103 | 136 |
| 1945 | 195 | 76 | 54 | 86 | 176 | 113 | 103 | 131 |
| 1946 | 206 | 71 | 42 | 80 | 196 | 126 | 106 | 133 |
| 1947 | 220 | 64 | 35 | 84 | 236 | 142 | 118 | 127 |
| 1948 | 240 | 59 | 31 | 79 | 244 | 158 | 131 | 128 |
| 1949 | 266 | 54 | 28 | 72 | 188 | 174 | 134 | 124 |
| 1950 | 290 | 49 | 23 | 63 | 196 | 175 | 135 | 139 |
| 1951 | 317 | 45 | 19 | 56 | 221 | 189 | 136 | 165 |
| 1952 | 335 | 40 | 16 | 55 | 231 | 187 | 139 | 158 |
| 1953 | 354 | 35 | 15 | 54 | 207 | 183 | 143 | 155 |
| 1954 | 5/ 370 | 32 | 14 | 54 | 6/ 207 | 7/ 185 | 7/ 146 | 7/ 156 |

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1/ Numbers and value per head of horses and mules and prices paid by farmers are from Agricultural Marketing Service reports.

2/ The 1935-39 averages were: Horses and mules all ages, 15,750,000 head; value per head, $97.65; feed cost per head, $48.15; colts under one year of age 744,000 head; tractors, 1,244,000; prices paid by farmers for new tractors, $1,060; gasoline $0.19; and tires, $12.60

3/ Based on 25 bushels each of oats and corn and 2 tons of baled hay.

4/ Tractor prices are for medium size (20-29 BHP) wheel tractor equipped with rubber tires.

5/ Preliminary estimates.

6/ Average of the first 8 months.

7/ Average prices paid in March and June.

## Horses and Mules

Demand for horses and mules has declined for many years and current prices are only slightly more than half of the average prewar prices. With the low prices there have been consistent and large declines in the size of the colt crop.

## Cost Reduction Possibilities

Farm machinery expenses account for a large part of all production expenses on most farms. On spring wheat farms in the northern Plains, for example, machinery expenses accounted for 68 percent of total operating expenses in 1953 (table 4). Farm machinery represents about 40 percent of all farm production expenses in the country.

Table 4.- Machinery expenses, selected types of farms, 1953

| Cost item | Type of farm | | |
|---|---|---|---|
| | Cash grain, Corn Belt | Wheat-small grain-livestock, northern Plains | Cotton, southern Piedmont |
| | Dollars | Dollars | Dollars |
| Total farm operating expenses 1/ | 6,335 | 5,267 | 2/ 2,025 |
| Machinery depreciation | 1,345 | 1,283 | 170 |
| Other machinery expense | 1,368 | 2,293 | 508 |
| Total machinery expense | 2,713 | 3,576 | 678 |
| Machinery expense as percentage of total farm operating expense | 43 | 68 | 33 |
| Machinery purchased 3/ | 1,514 | 1,142 | 190 |

1/ Includes all cash expenditures for operating the farm and depreciation.

2/ Also includes value of perquisites to croppers.

3/ Machinery purchases adjusted for change in inventory equals depreciation.

A farmer who contemplates buying machinery in 1955 whether for replacement or addition probably is in one of three groups: (1) He may buy a particular machine for convenience; (2) he may buy the machine to be equipped for emergencies as well as for normal operations, although under ordinary circumstances he could not expect to reduce his costs or increase his income by owning it; (3) he may buy the machine to reduce his costs or to increase his net income under normal operating conditions.

In any of these situations he may have ample reasons for buying farm machinery. But in the first instance, costs, or increased net income, is not a primary factor. In the second situation, the risk involved and the cost of reducing it must be considered.

Opportunities for reducing costs and increasing net income over a period of years by use of additional machinery frequently exist on farms where hired labor provides a large part of the labor force or where hired labor accounts for a large part of the operating expenses. Also, opportunities frequently arise in the enlarging of farms when it would be necessary to hire more labor if no additional machinery were bought.

As indicated in figure 2, from 1940 to 1946 wage rates rose much faster than did prices of machinery. Since that time the relationship has not changed appreciably. On some farms operators have already adjusted to the current relationship between wage rates and machinery prices, and have little opportunity further to reduce costs by using more machinery. On other farms labor costs per acre and per unit of production are still high.

For some farms in this latter group, machines may not be available to perform jobs now done with manual labor. Operators of some other farms have adjusted to the high cost of hired labor by holding down or reducing the size of their operations to a point at which most of the labor can be performed by the operator and his family.

On other farms with relatively high labor costs operators are either not aware of the opportunities for cost reduction through use of more machinery or they lack the necessary capital to make the adjustment. Operators of small farms may find opportunities to reduce costs by buying used or rebuilt machines that will perform satisfactory service on small acreages.

## Feed

Prices of feed in September generally were close to those of last February and about 2 percent above those of a year ago (table 5). Exceptions are soybean meal, cottonseed meal and meat scrap, which were 15 to 20 percent above those of a year ago and 10 to 15 percent above those of February 1954. September prices of alfalfa hay were 70 cents a ton higher than a year earlier. The general level of feed prices in the 1954-55 feeding season is expected to average about the same as in the 1953-54 season. Cottonseed meal may average higher and soybean meal lower than a year earlier.

Total supplies of feed concentrates for the 1954-55 season are about 4 percent larger than a year ago (table 6). Most of the increase in the supply results from the larger carryover of feed grains under loan or owned by the Commodity Credit Corporation. The corn crop is smaller than last year, but other feed grains more than make up for it. The supply

Table 5.- Average prices of feeds in the United States, September 15, 1954 with comparisons

| Item | Unit | Sept. 15, 1952 | Sept. 15, 1953 | Feb. 15, 1954 | Sept. 15, 1954 |
|---|---|---|---|---|---|
| | | Dollars | Dollars | Dollars | Dollars |
| Prices received by farmers | | | | | |
| Corn | Bushel | 1.71 | 1.50 | 1.43 | 1.53 |
| Oats | do. | .84 | .71 | .78 | .71 |
| Barley | do. | 1.43 | 1.12 | 1.15 | 1.05 |
| Sorghum grain | Cwt. | 3.02 | 2.26 | 2.32 | 2.16 |
| Hay, baled | Ton | 25.00 | 20.90 | 23.70 | 22.00 |
| Feed grains and hay, Index number (1935-39=100) | | 246 | 216 | 217 | 219 |
| Prices paid by farmers | | | | | |
| Mixed dairy feed 16% | Cwt. | 4.37 | 3.90 | 3.99 | 3.82 |
| Laying mash | do. | 5.35 | 4.80 | 4.86 | 4.90 |
| Broiler mash | do. | --- | 5.22 | 5.26 | 5.33 |
| Cottonseed meal | do. | 5.33 | 3.72 | 4.02 | 4.45 |
| Soybean meal | do. | 6.08 | 4.60 | 5.01 | 5.52 |
| Linseed meal | do. | 5.43 | 4.60 | 4.91 | 4.61 |
| Meat scrap | do. | 6.73 | 5.37 | 5.43 | 6.18 |
| Bran | do. | 3.77 | 3.11 | 3.27 | 3.01 |
| Middlings | do. | 3.96 | 3.26 | 3.33 | 3.18 |
| Alfalfa hay, baled | Ton | 37.60 | 33.60 | 35.90 | 34.30 |
| Prices paid by farmers for feed, Index number (1935-39=100) | | 242 | 210 | 214 | 215 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | | |
| Fed to poultry | Cwt. | 4.28 | 3.82 | 3.86 | 3.89 |
| Fed to milk cows in milk-selling areas | Cwt. | 3.88 | 3.39 | 3.44 | 3.35 |
| Fed to milk cows in cream-selling areas | Cwt. | 3.40 | 2.98 | 3.06 | 2.98 |

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1/ Value of the corn, oats, oilmeal, millfeed, commercial mixed feed, etc., making up 100 pounds of "grain" ration.

Agricultural Marketing Service.

Table 6.- Feed concentrates, supply and utilization, and livestock fed, United States, 1937-54 1/

| Year beginning October | Supply | | | | Utilization | | Stocks of feed grains end of year 2/ | Animal units grain-consuming livestock fed annually | Production feed grains per animal unit | Supply concentrates per animal unit | Concentrates fed per animal unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stocks, feed grains beginning of year | Production, feed grains | Wheat, rye and by-proudct feeds fed | Total | Seed, feed, industry and exports of feed grains | Concentrates fed to livestock | | | | | |
| | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million units | Tons | Tons | Tons |
| Av. 1937-41 | 16.9 | 99.3 | 19.9 | 136.1 | 12.1 | 104.9 | 19.9 | 153.1 | 0.65 | 0.89 | 0.69 |
| Av. 1942-46 | 14.7 | 117.3 | 29.4 | 161.4 | 14.8 | 133.0 | 13.5 | 177.5 | .66 | .91 | .75 |
| 1947 | 13.8 | 94.1 | 24.7 | 132.6 | 13.6 | 110.4 | 7.8 | 154.0 | .61 | .86 | .72 |
| 1948 | 7.8 | 135.4 | 23.5 | 166.7 | 17.6 | 120.1 | 30.4 | 160.1 | .85 | 1.04 | .75 |
| 1949 | 30.4 | 120.6 | 25.2 | 176.2 | 17.2 | 127.3 | 30.6 | 166.1 | .73 | 1.06 | .77 |
| 1950 | 30.6 | 122.0 | 26.0 | 178.6 | 20.4 | 129.8 | 28.7 | 172.3 | .71 | 1.04 | .75 |
| 1951 | 28.7 | 112.9 | 27.0 | 168.6 | 17.1 | 131.6 | 20.2 | 174.2 | .65 | .97 | .76 |
| 1952 | 20.2 | 119.7 | 27.9 | 167.8 | 17.0 | 122.7 | 27.0 | 170.4 | .70 | .98 | .72 |
| 1953 | 27.0 | 117.2 | 27.7 | 171.9 | 16.0 | 126.0 | 31.0 | 168.1 | .70 | 1.02 | .75 |
| 1954 3/ | 31.0 | 119.6 | 27.4 | 178.0 | 17.0 | 131.0 | 30.0 | 174.0 | .69 | 1.02 | .75 |

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1/ From Feed Statistics, page 2, January 1954, AMS, and Feed Situation, August 1954, table 2.

2/ Stocks do not necessarily exactly equal supply less feed and other utilization because of a difference in the crop year for different feed grains.

3/ Preliminary.

of oilseed meals will be about 4 percent larger than a year ago. The quantity of cottonseed meal for feed will probably be down nearly a fourth because of the smaller cotton crop. Soybean meal fed in 1954-55 may be about a fifth larger than last year because of the much larger soybean crop. The only other large change in the supply of high-protein feed for the year ahead compared with the preceding year is that the large quantity of dried milk from Government stocks sold to the feed industry last year probably will not be available this year. In 1954 the supply of high-protein feed was increased by the release of 573 million pounds of dried milk from Government stocks.

The number of animals to be fed in the year beginning October 1 is expected to be up about 3 to 4 percent. Thus the supply of all concentrates per animal unit will be up about one percent and the carryover of feed grains at the end of the year will be nearly as large as this year. The quantity of high-protein feeds (oilmeal equivalent basis) to be fed per animal unit is expected to be down about 3 to 4 percent. The expected increase of about 10 percent in numbers of hogs accounts for most of the expected increase in livestock to be fed in 1954-55 although there will be some increase in poultry.

The supply of hay per animal unit for the country as a whole is slightly larger than last year. In a fourth of the States production of hay in 1954 was 15 percent or more below average and in several southern States it was a third or more below average. Poor to extremely poor pasture prevailed over much of the country south of a line drawn from New Jersey to Wyoming, including the southern Corn Belt. Thus the increased cost of carrying livestock through the winter may be a problem on many farms in this area. In some places corn that is not worth picking is making 2 to 3 tons of silage per acre or the equivalent in dry fodder. This will help to get the cattle through the winter but there will be little new corn for feeding to hogs or to cattle that ordinarily would be fattened. It will be necessary to ship larger quantities of hay and concentrates into drought areas in some southern States.

In September 1954 returns per $1.00 of feed were below those of a year ago for each class of livestock and poultry except sheep, and all were below the 15-year average, 1937-51 (table 7). All prices of livestock and poultry were below those of a year ago except for beef cattle, calves, and lambs. The sharpest declines since last February were in eggs and hogs. Returns per $1.00 of feed in September were lowest for eggs, turkeys, milk, and butterfat since this series was started in 1937. However, cattle feeding in 1953-54 gave returns 17 percent above average. Prices of feeder cattle are higher than a year ago and returns for the 1954-55 season probably will not be as high as in the preceding season.

Low returns from several livestock and poultry enterprises present a serious problem for farmers who buy most of their feed. On some farms it may be possible to reduce costs by changing feeding practices, or by reducing labor. Changes in building arrangements may reduce costs materially over a period of years.

Table 7.- Returns per $1.00 of feed cost of livestock enterprises United States, Sept. 15, 1954, with comparisons 1/

| Livestock enterprise or product | 1937-51 average Sept. | Sept. 15, 1951 | Sept. 15, 1952 | Sept. 15, 1953 | Feb. 15, 1954 4/ | Sept. 15, 1954 |
|---|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.91 | 1.97 | 1.62 | 1.93 | 1.69 | 1.24 |
| Broilers | 2/ 1.64 | --- | --- | 1.61 | 1.32 | 1.35 |
| Milk | 2.17 | 2.08 | 2.00 | 2.03 | 1.81 | 1.85 |
| Butterfat | 1.71 | 1.56 | 1.52 | 1.45 | 1.35 | 1.21 |
| Hogs | 1.65 | 1.49 | 1.50 | 1.96 | 2.16 | 1.57 |
| Sheep raising | 1.70 | 2.05 | 1.44 | 1.39 | 1.32 | 1.40 |
| Beef raising | 1.83 | 2.58 | 1.92 | 1.47 | 1.42 | 1.44 |
| Cattle feeding | 3/ 1.25 | | 1951-52<br>1.33 | 1952-53<br>.72 | 1953-54<br>1.46 | |
| | | Index numbers (1937-51=100) | | | | |
| Eggs | 100 | 103 | 85 | 101 | 113 | 65 |
| Broilers | 100 | --- | --- | 98 | 80 | 82 |
| Milk | 100 | 96 | 92 | 94 | 94 | 85 |
| Butterfat | 100 | 91 | 89 | 85 | 88 | 71 |
| Hogs | 100 | 90 | 91 | 119 | 129 | 95 |
| Sheep raising | 100 | 121 | 85 | 82 | 82 | 82 |
| Beef raising | 100 | 141 | 105 | 80 | 81 | 79 |
| Cattle feeding | 3/100 | | 1951-52<br>106 | 1952-53<br>58 | 1953-54<br>117 | |

1/ The following quantities of feed were used in calculating feed cost: 7 pounds of poultry ration per dozen eggs; $4\frac{1}{2}$ pounds of chick starter per pound of broiler in 1935-39. In 1951 and 1952, $3\frac{1}{2}$ pounds of chick starter and since 1952, $3\frac{1}{4}$ pounds of broiler mash. No prices available on broiler mash before 1953. $7\frac{1}{2}$ bushels of corn plus 20 pounds of soybean meal per 100 pounds of hogs; 30 pounds of concentrate ration fed to milk cows in milk-selling areas plus the valu of 110 pounds of hay, per 100 pounds of milk; $7\frac{1}{2}$ pounds of concentrate ration fed to milk cows in cream-selling areas plus the value of 27.5 pounds of hay in Minnesota and Iowa, per pound of butterfat; 3 bushels of corn plus 600 pounds of hay per 100 pounds of beef cattle; 2 bushels of corn plus 1,500 pounds of hay per 100 pounds of sheep and lambs. It was assumed that for each 100 pounds of sheep and lamb produced, 20 pounds of wool were produced from the same feed. The quantity of hay for milk cows, beef cattle, and sheep includes an allowance for silage and pasture. It was assumed that the feed nutrients from pasture would cost 1/4 as much per pound as they would if obtained from hay. Cattle feeding returns are based on table 1, Livestock and Meat Situation, Aug.-Sept., 1954. It was designed to represent average feeding experience in the Corn Belt.

2/ Average for March.

3/ 1920 52 average.

4/ Index numbers for February are based on 1937-51 averages for February.

## Seeds

The index of prices paid by farmers for seeds was about 6 percent lower in 1954 than in 1953. In the spring of 1954 prices paid for 25 of 33 kinds of seeds for which data are available were below a year earlier. Prices of seed potatoes and Ladino clover declined considerably while prices of Kentucky bluegrass and redtop increased substantially.

In general, a slight decline in prices of all seeds is expected in 1955. However, changes in prices of individual seeds will differ widely depending upon the supply of the particular seed. Seed potatoes are expected to be considerably higher next year.

Prices paid by farmers for two-thirds of the grass and legume seeds are higher this fall than they were last spring. Greatest advances have occurred in prices of orchardgrass, timothy, white clover, and improved varieties of alfalfa seed. Prices of alsike, Ladino and red clover, Grimm and common alfalfa, and crested wheatgrass are also higher than last spring. Sharpest declines have occurred in Kentucky bluegrass and common ryegrass, with smaller declines reported for hairy vetch, smooth brome, and redtop.

Compared with prices of grass and legume seeds in the fall of 1953, current retail prices of 13 are higher and 12 are lower. Greatest advances over last fall are reported for sweet and blue lupine, orchardgrass, white clover, common crimson clover, timothy, redtop, and perennial ryegrass. Sharpest declines from last fall occurred with Ladino and alsike clover, smooth brome, purple vetch, and wild winter peas.

Total supply (production plus carryover) of 23 grass and legume seeds for which production forecasts have been made is about a sixth below that of last year and a tenth below the 1943-52 average. Current supply of cloverseed, exclusive of crimson clover which is sown mostly in the fall along with other winter cover-crop seeds, is about a sixth smaller than last year and about 5 percent below average. The supply of grass seeds, except common and perennial ryegrass included in the winter cover-crop group, is slightly smaller than last year and about 6 percent below average. The supply of winter cover-crop seeds is nearly a fifth smaller than last year and a sixth below average.

Seeds in shortest supply, compared with the 10-year average, are redtop, Austrian Winter peas, timothy, common vetch, lupine, crested wheatgrass, and Kentucky bluegrass. But supplies of the last two--crested wheatgrass and Kentucky bluegrass--are larger than a year ago. Supplies of fescues, ryegrasses, Ladino clover, hairy vetch, and smooth brome are much above average.

## Fertilizer

Farmers are expected to use a little more commercial fertilizer in terms of plant nutrients next year than they used this year. They used more in 1954 than they had ever used before. Prices of fertilizer are likely to remain unchanged, and supplies of all plant nutrients are expected to be adequate to meet anticipated demands. More of the specialized equipment used in applying anhydrous ammonia will be available.

Prices of fertilizer have increased about 8 percent since 1950 and about 58 percent since 1940. But these increases have been small compared with increases in most other prices. Prices of fertilizer currently are lower than they were in 1940 relative to other prices paid as well as to prices received. These changes in price relationships have been partly responsible for the nearly fourfold increase in consumption of fertilizer since 1940.

The aggregate available supply of the three primary plant nutrients has reached a new high each year since 1938-39. In 1953-54 total deliveries of the three primary plant nutrients was 6.215 million tons compared with 5.957 million tons in the previous year. The increased supply in 1953-54 was absorbed by consuming channels with less apparent carryover than for the previous year.

It is estimated that the aggregate 1954-55 supply of the three primary plant nutrients will exceed the 1953-54 supply by about 5 percent. The supply should be ample to satisfy expected demands.

Nitrogen (N): The supply of Nitrogen (N) available for fertilizer purposes in 1954-55 is currently estimated at approximately 2.2 million tons. This estimate is based on current rate of production, plant capacity, and storage facilities, and assuming an import-export balance at about the 1953-54 level. The estimated 2.2 million tons for 1954-55 represent an increase of about 8.9 percent over the 2 million tons reported for 1953-54. The supply of solid Nitrogen materials (dry Nitrogen) available for 1954-55 probably will comprise approximately 55 percent and solutions and liquid materials (wet Nitrogen) about 45 percent of the total supply, compared to 57 percent and 43 percent respectively for the previous year.

Phosphates ($P_2O_5$): The 1954-55 supply of available phosphoric oxide ($P_2O_5$) is expected to be about 2.35 million tons, the same as in 1953-54. This estimate is based on current rate of production, trends in consumption in recent years, and an assumption that the import-export balance will be about the same as in 1953-54. The industry has the capacity to produce a considerably larger tonnage in 1954-55 if demand warrants.

Potash ($K_2O$): The 1954-55 supply of potash available for fertilizer in terms of Potassium Oxide ($K_2O$) is estimated at 1.97 million tons. This represents an increase of approximately 7.6 percent over the 1.83 million tons available in 1953-54. This estimate reflects present rate of production, trends in use, and probable demand in 1954-55. Plant capacity is adequate.

Rates of Application

During the last 3 years, farm prices have declined relative to prices of fertilizer. But the relationship is still more favorable than before World War II. Many farms have not yet fully adjusted to the new price relationships and developments in the use of fertilizer. Recent increases in use of fertilizer have been particularly important for hay, pasture, and other feed crops.

From the viewpoint of individual farmers, a major problem with respect to use of fertilizer is the prospective net returns from various levels of application. For agriculture as a whole, effects on output and the nature of prospective demand deserve consideration. Increased use of fertilizer on crops now under control programs would tend to increase yield and could accentuate control problems.

Increased use of fertilizer on hay, pasture, and feed grains when grown in rotation can build up fertility levels and reduce costs of all crop production in future years. Furthermore, an increased output of hay and pasture in 1955 is badly needed in areas experiencing drought in 1954. And more hay and pasture would not directly accentuate the surplus problems that may exist for some of the major cash crops.

Although the most profitable rate of fertilizer application will vary widely, depending on the crop, soil conditions, and price relationships, a general approach to determining the amounts to apply can be used. This approach is illustrated in table 8.

Data presented in table 8 are based on experiments and estimates relating to Corn Belt soils of below average fertility. The use of fertilizer on most Corn Belt soils would not increase the yield of corn as much as is indicated by the estimates presented in table 8.

The most profitable quantity of fertilizer to apply depends on the price of fertilizer and the price of corn as well as the fertility of the soil in question. The appropriate price of corn for such comparisons is the price of corn at the farm less the cost of harvesting. A value of $1.20 a bushel is used here for illustrative purposes. Application of 6 units represents just a little more than the most profitable rate. Returns over fertilizer costs have just begun to decline. Also, returns per dollar spent for fertilizer at that point have fallen until they are just below $1.00, and the cost per additional bushel has risen to a fraction above the specified price per bushel, which is $1.20.

If additional yields up to the most profitable rate are summed, the total increase is found to be almost 80 bushels. But other factors must be taken into account. One of these is weather risk. With application of 6 units as the "break even" point the farmer might prefer a somewhat lower rate because other factors may enter in. If, for example, he chose to apply 5 units the sacrifice in additional net return would be

Table 8.- Additional yields of corn, additional returns at $1.20 a bushel, 1/ additional costs and returns per dollar spent for fertilizer at different rates of application

| Fertilizer applied 2/: | | Additional | | | | | |
|---|---|---|---|---|---|---|---|
| Total units ..... (1) | Additional units (2) | Yield per acre (3) | Gross return per acre (4) | Fertilizer cost per acre (5) | Return over cost per acre (Col. 4- Col. 5) (6) | Cost per bushel (Col. 5÷ Col. 3) (7) | Return per additional dollar cost (Col. 4 ÷ Col. 5) (8) |
| Number | Number | Bushels | Dollars | Dollars | Dollars | Dollars | Dollars |
| 0 | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1.00 | 19.29 | 23.17 | 5.92 | 17.25 | 0.31 | 3.91 |
| 2 | 1.00 | 17.84 | 21.41 | 6.55 | 14.86 | .37 | 3.27 |
| 3 | 1.00 | 15.12 | 18.14 | 7.38 | 10.76 | .49 | 2.16 |
| 4 | 1.00 | 11.90 | 14.28 | 7.32 | 6.96 | .62 | 1.95 |
| 5 | 1.00 | 9.06 | 10.87 | 7.36 | 3.51 | .81 | 1.48 |
| 5½ | .50 | 3.61 | 4.34 | 3.66 | .68 | 1.01 | 1.19 |
| 5 3/4 | .25 | 1.61 | 1.93 | 1.84 | .09 | 1.14 | 1.05 |
| 6 | .25 | 1.49 | 1.79 | 1.81 | 3/ -.02 | 3/ 1.21 | 3/ .99 |

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1/ This price is the assumed value of the corn in the field before harvesting.

2/ Each whole unit consists of 20 pounds of $P_2O_5$ together with the quantities of N and $K_2O$ that are most profitably used with it, based on the relative cost of the three nutrients. Thus, the cost of each additional whole unit, (Col. 5) varies slightly, particularly between the first two units as no $K_2O$ is included in the first unit.

3/ Application of 6 units is a little past the "break-even" point with corn at $1.20. The application at this point is about 325 pounds of N, $P_2O_5$ and $K_2O$.

small as compared with returns from using the estimated most profitable rate. Information as to the "break even" point is important as a starting point in evaluating other risks.

In many situations a farmer may want to consider a different allocation of his expenditures for fertilizer as compared with his past practice. In the interest of reduced cost and increased returns over a period of 3 to 4 years, consideration might be given to using more fertilizer on acres diverted to hay and pasture. Decisions in this matter can be based on information of the kind given in table 8 for each crop considered.

## Building Materials and Farm Supplies

No change of any consequence has taken place in prices of building materials since 1951 and little, if any, change is expected in the next 12 months (fig. 5). Prices of lumber softened earlier this year but strengthened in the third quarter when construction activity picked up and northwestern lumber workers went out on strike. Housing starts were 19 percent higher in August 1954 than in August 1953.

Farmers who contemplate new construction or remodeling face some difficult decisions. They find (1) that it would cost about 4 times as much to replace many farm buildings as it cost to build them originally; (2) that building costs are not expected to return to anything like prewar levels in the near future; and (3) that many conventional buildings are not well-designed from the standpoint of making most effective use of labor-saving machinery and equipment. This is an important consideration because farm wage rates have increased four or fivefold since most of our conventional farm buildings were built.

A complete overhauling of dairy buildings may be the answer for many dairy farmers. Research workers are beginning to look at the problem from several angles and are coming up with some interesting answers. One group of engineers, economists, and dairy specialists found that one-story dairy buildings of the loose-housing type with ground-level storage of feed and bedding, together with equipment for handling 20 to 30 cows, can be provided at about half the cost of conventional stall barns of the same capacity commonly found on dairy farms. A preliminary report (U.S.D.A. Marketing Research Report No. 64) covering a 3-year study of a group of farms in the St. Louis, Mo., milkshed points out that quality of milk once established at a high level by effective sanitation and cooling was not affected by development and use of these relatively low-cost buildings.

On some farms where buildings were remodeled, dairy chore labor was reduced to less than half that previously used. Also, only a little more than 500 pounds of bedding per cow was found necessary for satisfactory results on farms where hay feeding and shelter areas were separate. This low consumption of bedding made possible by properly arranged

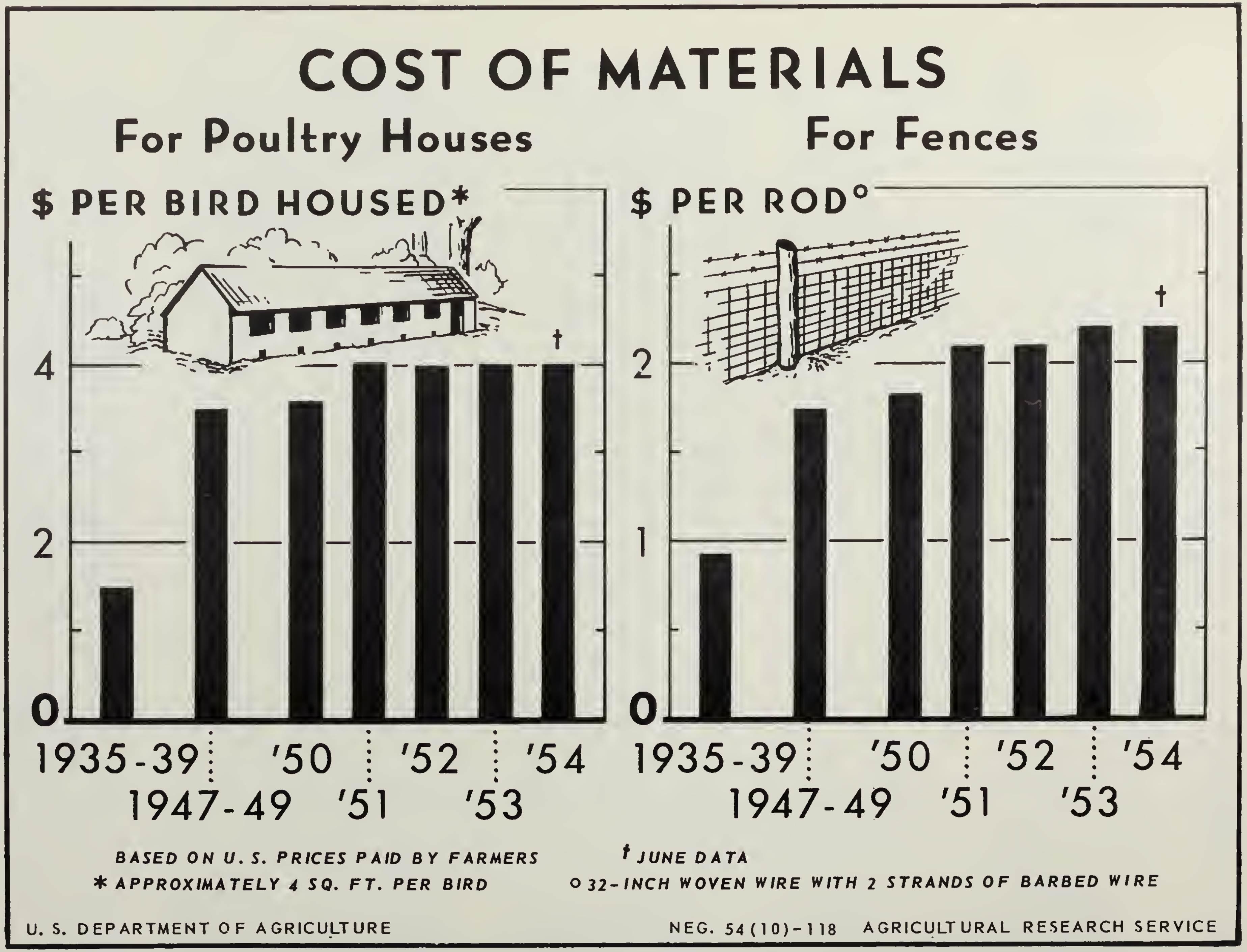
COST OF MATERIALS
For Poultry Houses
For Fences
$ PER BIRD HOUSED*
$ PER ROD°
0
2
4
0
1
2
†
†
1935-39
1947-49
'50
'51
'52
'53
'54
1935-39
1947-49
'50
'51
'52
'53
'54
BASED ON U. S. PRICES PAID BY FARMERS
* APPROXIMATELY 4 SQ. FT. PER BIRD
† JUNE DATA
° 32-INCH WOVEN WIRE WITH 2 STRANDS OF BARBED WIRE
U. S. DEPARTMENT OF AGRICULTURE
NEG. 54(10)-118 AGRICULTURAL RESEARCH SERVICE

Figure 5

loose-housing systems is of major importance in some areas. It permits use of low-cost dairy housing even where supplies of bedding materials are not plentiful.

The answer to the question of how to reduce costs on poultry farms where in the past operations were usually conducted in one-story buildings may differ somewhat from the answer suggested for dairy farms. In fact, it may be simpler to rebuild many dairy barns into efficient poultry houses than to make them over into efficient dairy barns. The efficiency of multiple-story poultry houses with elevators, automatic drinking fountains, and feed stored where it will run into hoppers by gravity has been demonstrated in many places. With such facilities, one man can handle about 5,000 layers with little help except perhaps when house cleaning is needed. House cleaning may need to be done only once a year.

Prices of fencing materials are expected to be about the same in 1955 as they have been since 1951. Many farmers have found that they can get along satisfactorily by using electric fences. In the past more expensive types were used. A few farmers are experimenting with keeping their cattle confined to relatively small areas during the pasture season and are hauling chopped green feed to them. This reduces the cost of fences but its effect on total costs has not been determined.

Prices of containers are also expected to be generally stable in the year ahead. Continued expansion of bulk handling of farm products, at least until after they have left the farm, appears to be in prospect. Bulk handling of milk from farms to dealers' plants is developing in many areas and some commercial feeds are now delivered to farmers in bulk. Another illustration is custom application of lime and fertilizer directly from bulk supplies. Changes such as these are made primarily to reduce handling and transportation costs but the saving in cost of containers is sometimes an additional consideration.

## Pesticides

Prices of pesticides were mostly unchanged from 1953 to 1954 and no important changes are indicated for 1955. Manufacturers' prices of benzene hexachloride and DDT were slightly higher in September 1954 than a year earlier, but prices of 2,4-D and lindane were slightly lower. Prices of such staples as lead arsenate, copper sulphate, and sulphur remained unchanged. The number of chemicals for which the quoted price includes some or all of the transportation charges has increased from a year ago.

Incomplete information indicates that a total of about 260 million pounds of the major pesticides, excluding ground sulfur, were used in 1954 compared with about 210 million pounds in 1953. From 60 to 80 million pounds of copper sulfate, 60 to 70 million pounds of DDT, and 20 to 25 million pounds of 2,4-D are used each year. In addition, more than 25 million pounds of several established organic fungicides are used.

Agricultural pests (insects, diseases, and weeds) are destroying each year about one-fourth of this country's potential production from its croplands, ranges, and forests. 1/ In addition, other pests reduce livestock production about 7 percent below the level attainable if these losses were eliminated. Undoubtedly, it would not be economically feasible with present price and cost relationships nor does knowledge exist to eliminate these losses completely. But increased realization of these facts among the Nation's scientists and producers plus the development since World War II of scores of new pesticidal chemicals have been important factors in the growing demand for, and use of these materials.

Agricultural producers will benefit by keeping up-to-date on the development of new, effective pesticides. Many dairymen and livestockmen may find the new insecticides--malathion and diazinon--worth trying for flies which show resistance to DDT. Cotton, tobacco, and truck crop growers may want to test endrin against some of their specific insect problems. Helping to answer the weed problem are new urea and carbamate herbicides, as well as the older effective materials. Several good organic fungicides are now available to help prevent serious losses to plant diseases.

## Land Costs and Rents

Prices of farmland have drifted moderately lower since the post-Korean peak in mid-1952. Most of the 7-percent decline since then occurred in the fall of 1953 when drought and lower prices for cattle reduced farm income in large areas of the country. Prices of land remained essentially unchanged in the first half of 1954 but further small declines are again likely in the drought areas during the last half of the year. Prices have been firm throughout most of the Corn Belt where good prices for hogs and more favorable returns from cattle feeding this last year have helped to sustain farm income. However, farm real estate activity has continued at a relatively low level in most areas.

Both present owners and prospective buyers are inclined to delay transactions until future levels of income and land prices become more apparent. As a result, the spread between asking and offering prices has widened in recent months and buyers have become more selective as to quality of land. The better farms are still bringing near peak prices, but substantial price concessions or particularly favorable terms of financing from the seller are necessary to move the lower grade farms. Farmers who seek additional land to add to their present farms are still active bidders in most areas, but demand from nonfarm investors has weakened.

The cost of using farmland in any given year may depend on whether the user is a cash renter, a share renter, or an owner-operator. The advantage sometimes lies with the cash renter, sometimes with the share renter, and sometimes with the owner-operator.

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1/Agricultural Research Service, Losses in Agriculture, June 1954.

Although many nonmonetary considerations enter into the relative advantages of owning and renting land, it is possible to compare land costs under various rental arrangements with the capital charge for land derived from the mortgage interest rate. Over a period of years, the annual cost of land rented under a crop-share rental arrangement will generally exceed the capital charge for land because the landlord assumes part of the risks of price and weather. On cash-grain farms in east central Illinois, in 1951-53 for example, the net rent paid averaged more than 50 percent higher than the land charge based on the interest rate and current market value (table 9). On cotton farms in the Black Prairie of Texas, rents averaged about 30 percent higher.

Under a cash rental arrangement most of the risks of price changes and weather are carried by the renter. As a result, annual cost in relation to value of land rented more nearly approximates the mortgage rate of interest. However, cash rents are slow to respond to changes in land values and farm income. They tend to be low when the general trend is upward and relatively high during a downswing. Although cash rents can be adjusted more easily to changing income prospects than share rents, equitable methods for doing so have not been widely adopted. Data on cash rents paid for farmland in the North Central States are presented in tables 10 and 11.

Under a cropshare arrangement, rental shares are fixed largely by custom and change little from year to year but an increase in commodity prices is reflected immediately in the value of the crops paid as rent. Expenses for taxes and building maintenance that are normally paid by the landlord usually increase less rapidly so that the net share rent paid during such a period is frequently substantially higher than the land charge based on the mortgage rate of interest and the current value of land. When commodity prices and land values are stable or declining, land costs become adjusted more closely to the mortgage rate of interest with the difference arising largely from the difference in the amount of risk borne by the landlord and the renter.

Importance of the annual cost of capital invested in real estate is indicated by available data for average commercial family-operated farms in various parts of the country. 2/ These data show that the investment in land and buildings generally accounts for 50 to 75 percent of the total farm investment. Real estate represents the smallest proportion of the total investment for dairy and livestock farms and the largest for cash-grain and cotton farms. Marked changes in the relative importance of land and buildings in the total farm investment are also shown by these data. For most types of farms, investments in machinery, equipment, and livestock have increased more than has investment in real estate. As a result, the charge for land represents a smaller proportion of the total charge for all farm capital in recent years than before World War II. But, in some cotton areas where little progress has been made in mechanization and livestock numbers have not increased, the real estate component in total farm investment is about the same now as it was in 1937-41.

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2/ Farm Costs and Returns, 1953. U.S. Dept. Agr. Agr. Info. Bull. 128.

Table 9 .- Annual land cost: Estimated net rent and capital charge for farm real estate, selected types of farms 1/

| Type of farm | 1950 | 1951 | 1952 | 1953 |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars |
| Cash grain (Illinois): | | | | |
| Acres per farm | 223 | 224 | 224 | 226 |
| Total net rental cost | 3,698 | 5,216 | 4,183 | 4,167 |
| Capital charge for land | 2,210 | 2,615 | 2,813 | 2,943 |
| Net rent per acre | 16.58 | 23.28 | 18.67 | 18.44 |
| Ratio net rent to value (percent) | 7.0 | 8.4 | 6.2 | 5.9 |
| | | | | |
| Cotton (Black Prairie, Texas) | | | | |
| Acres per farm | 161 | 163 | 165 | 167 |
| Total net rental cost | 1,040 | 951 | 1,262 | 1,450 |
| Capital charge for land | 715 | 867 | 977 | 1,038 |
| Net rent per acre | 6.46 | 5.83 | 7.65 | 8.68 |
| Ratio net rent to value (percent) | 6.7 | 5.2 | 6.1 | 6.6 |

1/ Typical rental rates and sharing of expenses for each type of farm were assumed to determine net rent. Capital charges were derived by applying prevailing mortgage rates of interest to estimated market values of land and buildings.

Table 10.- Gross cash rent per acre: Entire farms rented wholly for cash, and pastureland only, North Central States, 1951-54 1/

| State | Entire farms | | | | Pastureland only | | | |
|---|---|---|---|---|---|---|---|---|
| | 1951 | 1952 | 1953 | 1954 | 1951 | 1952 | 1953 | 1954 |
| | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| Ohio | 8.10 | 9.30 | 9.30 | 9.70 | 5.10 | 5.70 | 5.30 | 6.50 |
| Indiana | 13.20 | 12.50 | 13.00 | 13.85 | 5.70 | 7.15 | 6.40 | 6.95 |
| Illinois | 13.30 | 14.70 | 15.10 | 15.90 | 6.90 | 7.10 | 7.40 | 7.65 |
| Michigan | 6.80 | 8.25 | 8.90 | 9.10 | 3.25 | 3.25 | 3.00 | 3.40 |
| Wisconsin | 9.80 | 10.40 | 11.20 | 10.80 | 3.95 | 4.40 | 4.40 | 4.50 |
| Minnesota | 8.05 | 8.65 | 9.30 | 9.45 | 4.50 | 4.70 | 4.90 | 5.10 |
| Iowa | 12.30 | 12.65 | 13.35 | 13.50 | 7.65 | 8.00 | 7.95 | 8.05 |
| Missouri | 6.70 | 6.80 | 6.80 | 6.70 | 3.85 | 4.50 | 4.50 | 4.20 |
| North Dakota | 2.35 | 2.80 | 2.75 | 3.00 | 1.00 | 1.00 | 1.10 | 1.20 |
| South Dakota | 3.50 | 4.40 | 4.20 | 4.10 | 1.50 | 1.70 | 1.75 | 1.80 |
| Nebraska | 6.60 | 6.00 | 5.40 | 5.90 | 3.20 | 3.50 | 3.75 | 3.65 |
| Kansas | 5.40 | 5.70 | 5.85 | 5.40 | 2.65 | 3.35 | 3.20 | 3.20 |

1/ Estimates supplied by crop reporters, as of April 1, for calendar year indicated.

Table 11.- Farmland rented for cash: Estimated value, net rent per acre and ratio of net rent to value, North Central States, 1954 with comparisons 1/

| State and item | Average 1937-41 | Average 1947-49 | 1951 | 1952 | 1953 | 1954 |
|---|---|---|---|---|---|---|
| Ohio: | | | | | | |
| Value per acre......Dollars | 62 | 132 | 157 | 172 | 167 | 187 |
| Net rent per acre.....do. | 2.54 | 4.70 | 5.12 | 5.82 | 5.82 | 5.86 |
| Ratio rent to value.Percent | 4.1 | 3.6 | 3.3 | 3.4 | 3.5 | 3.1 |
| Indiana: | | | | | | |
| Value per acre......Dollars | 64 | 153 | 194 | 210 | 200 | 200 |
| Net rent per acre.....do. | 3.30 | 7.54 | 9.63 | 8.69 | 9.15 | 9.92 |
| Ratio rent to value.Percent | 5.2 | 4.9 | 5.0 | 4.1 | 4.6 | 5.0 |
| Illinois: | | | | | | |
| Value per acre......Dollars | 99 | 196 | 265 | 273 | 274 | 287 |
| Net rent per acre.....do. | 3.95 | 7.45 | 8.59 | 9.70 | 9.73 | 10.28 |
| Ratio rent to value.Percent | 4.0 | 3.8 | 3.2 | 3.6 | 3.6 | 3.6 |
| Michigan: | | | | | | |
| Value per acre......Dollars | 52 | 109 | 127 | 133 | 145 | 140 |
| Net rent per acre.....do. | 2.06 | 4.20 | 4.05 | 5.31 | 5.60 | 5.79 |
| Ratio rent to value.Percent | 4.0 | 3.8 | 3.2 | 4.0 | 3.9 | 4.1 |
| Wisconsin: | | | | | | |
| Value per acre......Dollars | 60 | 106 | 131 | 136 | 134 | 123 |
| Net rent per acre.....do. | 2.09 | 4.73 | 5.78 | 6.07 | 6.74 | 6.35 |
| Ratio rent to value.Percent | 3.5 | 4.5 | 4.4 | 4.4 | 5.0 | 5.2 |
| Minnesota: | | | | | | |
| Value per acre......Dollars | 54 | 97 | 125 | 138 | 137 | 136 |
| Net rent per acre.....do. | 2.36 | 3.86 | 5.00 | 5.15 | 5.61 | 5.65 |
| Ratio rent to value.Percent | 4.4 | 4.0 | 4.0 | 3.7 | 4.1 | 4.1 |
| Iowa: | | | | | | |
| Value per acre......Dollars | 87 | 173 | 214 | 231 | 224 | 220 |
| Net rent per acre.....do. | 4.09 | 7.16 | 8.42 | 8.28 | 8.76 | 8.85 |
| Ratio rent to value.Percent | 4.7 | 4.1 | 3.9 | 3.6 | 3.9 | 4.0 |
| Missouri: | | | | | | |
| Value per acre......Dollars | 38 | 73 | 91 | 101 | 96 | 98 |
| Net rent per acre.....do. | 2.09 | 4.05 | 5.40 | 5.24 | 5.25 | 5.05 |
| Ratio rent to value.Percent | 5.6 | 5.5 | 6.0 | 5.2 | 5.5 | 5.1 |
| North Dakota: | | | | | | |
| Value per acre......Dollars | 12 | 26 | 35 | 37 | 38 | 39 |
| Net rent per acre.....do. | .58 | 1.63 | 1.76 | 2.17 | 2.09 | 2.29 |
| Ratio rent to value.Percent | 4.7 | 6.2 | 5.0 | 5.8 | 5.5 | 5.8 |
| South Dakota: | | | | | | |
| Value per acre......Dollars | 19 | 41 | 51 | 62 | 62 | 58 |
| Net rent per acre.....do. | .88 | 1.92 | 2.64 | 3.26 | 3.03 | 2.90 |
| Ratio rent to value.Percent | 4.6 | 4.7 | 5.1 | 5.2 | 4.9 | 5.0 |
| Nebraska: | | | | | | |
| Value per acre......Dollars | 37 | 70 | 106 | 101 | 96 | 97 |
| Net rent per acre.....do. | 1.65 | 3.38 | 5.15 | 4.62 | 3.86 | 4.28 |
| Ratio rent to value.Percent | 4.5 | 4.8 | 4.9 | 4.6 | 4.0 | 4.4 |
| Kansas: | | | | | | |
| Value per acre......Dollars | 34 | 64 | 82 | 86 | 90 | 84 |
| Net rent per acre.....do. | 1.49 | 3.27 | 4.23 | 4.46 | 4.44 | 3.98 |
| Ratio rent to value.Percent | 4.4 | 5.1 | 5.1 | 5.2 | 4.9 | 4.7 |

---

1/ Derived from data supplied by crop reporters. Allowances for farm real estate taxes and building depreciation have been deducted from gross rent to obtain net rent.

The proportion of net farm income needed to pay for the use of farm real estate at prevailing interest rates varies considerably among the various types of farms and from year to year. In 1953, for example, it was less than 20 percent of net farm income on dairy farms, hog-dairy farms and cotton farms in the Mississippi Delta. It amounted to 50 percent or more on cattle and sheep ranches in the northern Plains and it was nearly as high on wheat-pea farms in the Pacific Northwest and on cotton farms in the southern Piedmont area.

Although the land charge tends to be relatively fixed from year to year there are indications that the proportion of total farm income that is allocated to land has declined in recent decades. This stems partly from the steady increase in non-real-estate capital but a similar increase has occurred also in the share of farm income that is allocated to labor and management. Increased use of mechanical equipment, fertilizer, improved crops and livestock, and production practices require more technical knowledge and management skill on the part of the farm operator. Higher wage rates generally and greater employment opportunities off the farm, together with the higher standard of living which farm families have achieved and wish to maintain have also raised the proportion of total farm income that can be claimed for labor and management.

## Interest, Taxes, and Insurance

Non-Real-Estate Credit Costs - The total amount of interest paid for short-term, non-real-estate credit in 1954 will probably be 5 to 10 percent smaller than that paid in 1953. This results mainly from a decline in amount of credit used. Interest rates, which edged up in 1953, have stabilized or decreased slightly in 1954. For 1955, the outlook is for little further change--perhaps a slight decrease--in the amount and cost of non-real-estate credit. No substantial change in interest rates is expected.

These national changes lose some of their significance, however, because of the wide variation in interest costs among farmers. This variation among individuals is related both to amounts of credit used and to rate of interest charged. In attempting to reduce farm operating costs, it is desirable to obtain the lowest possible interest rate though not necessarily the smallest amount of credit.

With regard to the advisability of reducing or increasing the amount of non-real-estate credit no one answer is available for all farmers. Estimates of how much the proposed investments will increase income or reduce labor or other costs can be helpful in evaluating the desirability of borrowing money. Another factor to be considered, particularly in periods of uncertain price outlook, is the risk and consequences of inability to repay the expanded debt. The latter is particularly important when borrowing for consumption purposes. Only by weighing various factors relating to farm and financial management can a farmer decide the level of expenditures for credit that is justified.

For some farmers, obtaining a lower interest rate offers the greatest possibility of cutting interest costs. Costs of credit vary widely among lenders and creditors--from the relatively low charges of banks, production credit associations, and some individuals to the relatively high charges of some merchants, dealers, and personal finance companies. Many individuals who could qualify for loans from banks and production credit associations continue to borrow from high-cost creditors.

Borrowers sometimes do not know the rate of interest they are paying. The effective interest rate not only involves the stated rate and any fees or charges but also whether the rate applies to the full original amount of the loan or only to the balance of the loan as it is repaid. For instance, the effective rate on some so-called 6-percent amortized loans may be as much as 12 percent or more. Frequently a charge for credit, at a high rate of interest, is hidden in the price of the goods bought.

Many times, even though the actual interest rate is known, a borrower does not realize the amount that could be saved by a rate that is 1 or 2 percent lower. For example, a farmer who finances a purchase of machinery with a $2,000 loan amortized over a 3-year period at an effective annual rate of 8 percent would save about $60 in interest cost if he could borrow the same amount at 6 percent. Cutting of interest costs is often as simple as doing a little figuring, and then shopping among lenders for the best terms.

Mortgage Interest Payments - Farm-mortgage (real estate) debt continues to increase in 1954 at about the same rate as in 1953. The total is expected to be about $8.2 billion on January 1, 1955, representing an increase of approximately 7 percent. Interest payable in 1955 on farm-mortgage debt may be around $405 million as compared with $380 million estimated for 1954.

Demand for farm-mortgage credit has continued strong this year. Although the volume of farm real estate sales is lower and farm real estate prices have declined, a larger proportion of farm real estate sales are credit-financed. On credit-financed sales the resulting farm-mortgage debt is a larger proportion of the sale price.

In view of the active competition now existing and in prospect for high-quality farm-mortgage loans, a farmer who tries to place a loan might save a considerable amount. Or he might obtain a loan better suited to his needs by shopping around and comparing rates, terms, and amounts offered by different lenders. Interest rates alone substantially affect the annual payment needed to service a loan. A 20-year $10,000 loan under the standard amortization plan requires an annual payment of about $800 at 5 percent interest, $770 at 4.5 percent interest, and $740 at 4 percent interest. Similarly, while the 20-year $10,000 loan at 5 percent requires an annual amortization payment of $800 the payment rises to $960 a year if the loan is written for only 15 years. The total amount of interest payable is, however, $1,600 more for the 20-year loan than for the 15-year loan. Often farmers find that lenders who offer the longest terms and the lowest interest rates are more conservative and may make smaller loans on any given farm. In such cases farmers who have found it necessary to borrow larger amounts on short-term mortgages at higher rates may find it desirable to refinance as soon as they have enough equity to make such refinancing possible.

Farmers continue to carry a volume of short-term non-real-estate debt which at the beginning of 1954 totaled about $7.0 billion (excluding Commodity Credit Corporation loans) and compares with a farm-mortgage debt of $7.7 billion. This large volume of short-term debt, while somewhat lower than in recent years, still appears to be fairly large compared with the longer term farm-mortgage debt. Many farmers prefer to keep their debts as much as possible on a non-real-estate basis instead of increasing their present mortgages or mortgaging farms now clear of real estate debt. However refinancing short-term debt with a real estate mortgage usually reduces a farmer's annual interest cost substantially--often as much as a third. Also it spreads out the repayment over a number of years. There appears to be little overall advantage in refinancing non-real-estate debt with short-term mortgage debt, but refinancing with long-term mortgages of around 20 years as soon as possible usually strengthens a farmer's financial position. Certainly, in instances where a substantial amount of non-real-estate farm debt has been incurred for such long-run purposes as stocking, equipping, and improving a farm, it should ordinarily be put on a long-run amortized basis as soon as possible.

Taxes - Preliminary indications are that State and local taxes on farm real estate are continuing to rise. Available figures do not show separately what local units of government which depend heavily upon property taxes are spending for goods and services. But purchases by State and local governments in the second quarter of 1954, according to Department of Commerce reports, continued their upward trend. They were up one-tenth from the rate a year ago and the increase was half again as large as that in the previous year. The increase is considerably above the postwar average. Proportionately, public expenditures are a more important part of all private and public expenditures than a year ago. School and highway construction are reported to be one-fifth higher than a year ago.

Farm real estate taxes, levied in 1954 and payable largely in 1955, are expected to rise about 5 percent. Higher real property levies are anticipated in all but a few States.

Taxes on the personal property of farmers probably will decline during the period. The rate of decline will approximate 3 percent, largely because of the decline in assessed value per head of livestock over the previous year. Livestock represents more than half of all personal property of farmers that reaches assessment rolls. Personal property in the aggregate is about one-fifth of all property, real and personal. Thus the total property tax bill of farmers probably will increase about 4 percent.

On a typical 160-acre hog-dairy farm in the Corn Belt, taxes on real estate payable in 1954 were $350. An increase to about $370 is expected for 1955. Personal property taxes levied in 1954, payable largely in 1955, are about $108. The latter represents a slight decrease from the amount that was payable on the same property a year earlier.

Many farmers may lower their Federal income-tax liabilities on 1954 income by taking advantage in their returns of several new provisions of law enacted this year. These include more liberal depreciation rates on certain farm assets like machinery, more generous deductions for soil and water conservation expenses, and a more liberal definition of dependency of children and other relatives. Larger deductions for medical expenses will be permitted. Also for some farmers there may be cuts in their taxes on retirement income and investment dividends, and more liberal tax credits for installment purchases.

Insurance - Assessments paid by farmers to farmers' mutual insurance companies which insure most farm property may increase about 5 or 10 percent in 1954. Farm mutual rates per $100 of insurance are kept relatively stable by withdrawals from, or additions to, safety funds in years of heavy or light losses, so that variations in insurance costs of farmers are affected primarily by changes in amounts of insurance they carry. Such changes are directly related to changes in property valuations (replacement costs), and policy renewal periods.

Insurance against fire (and lightning) damage on the buildings, machinery, livestock, and stored crops on representative commercial family operated farms of 19 types for which data are available would have cost about $37 per farm in 1953. This figure is based on the assumption of 75 percent coverage and a rate equal to the average of those charged by farm mutual insurance companies operating in areas in which the farms are located.

The value of this property dropped about 12 percent from 1952 to 1953 primarily because of reductions in unit values of livestock and stored crops. No significant changes have occurred since in property values, replacement costs, or insurance rates. Thus the insurance cost on these farms should be about the same ($37) in 1954 as in 1953. For farm mutuals in States in which these representative farms are located, the cost of insurance (losses plus expenses) averaged about 20 cents per $100 in 1953, compared with 23 cents for the United States as a whole.

Mainly because of drought, but also because of serious rust damage on durum wheat, Federal all-risk crop insurance indemnities paid to farmers in 1954 will exceed premiums collected by $5 to $10 million. Farmers carried more hail insurance against crop damage in 1954 than in any previous year and the loss rate was considerably above average.

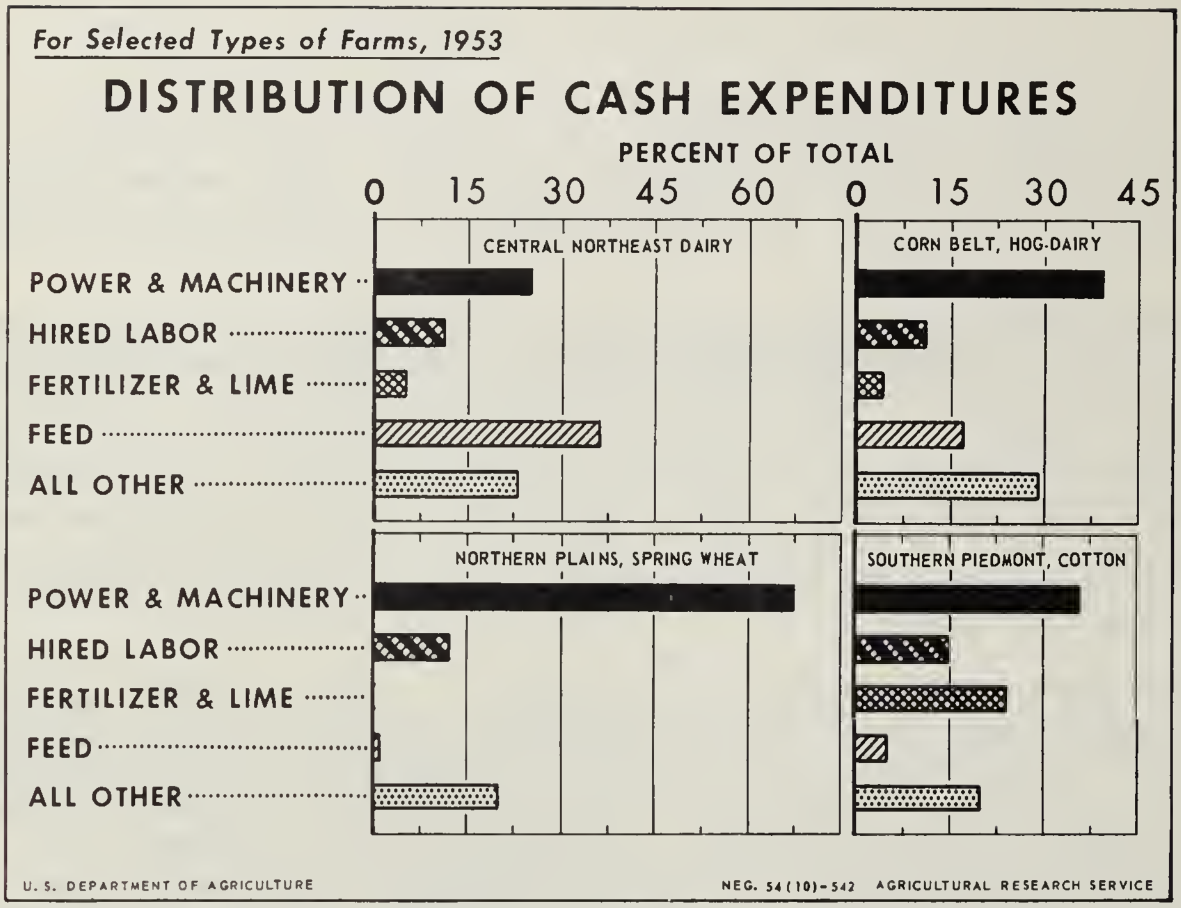

Figure 6

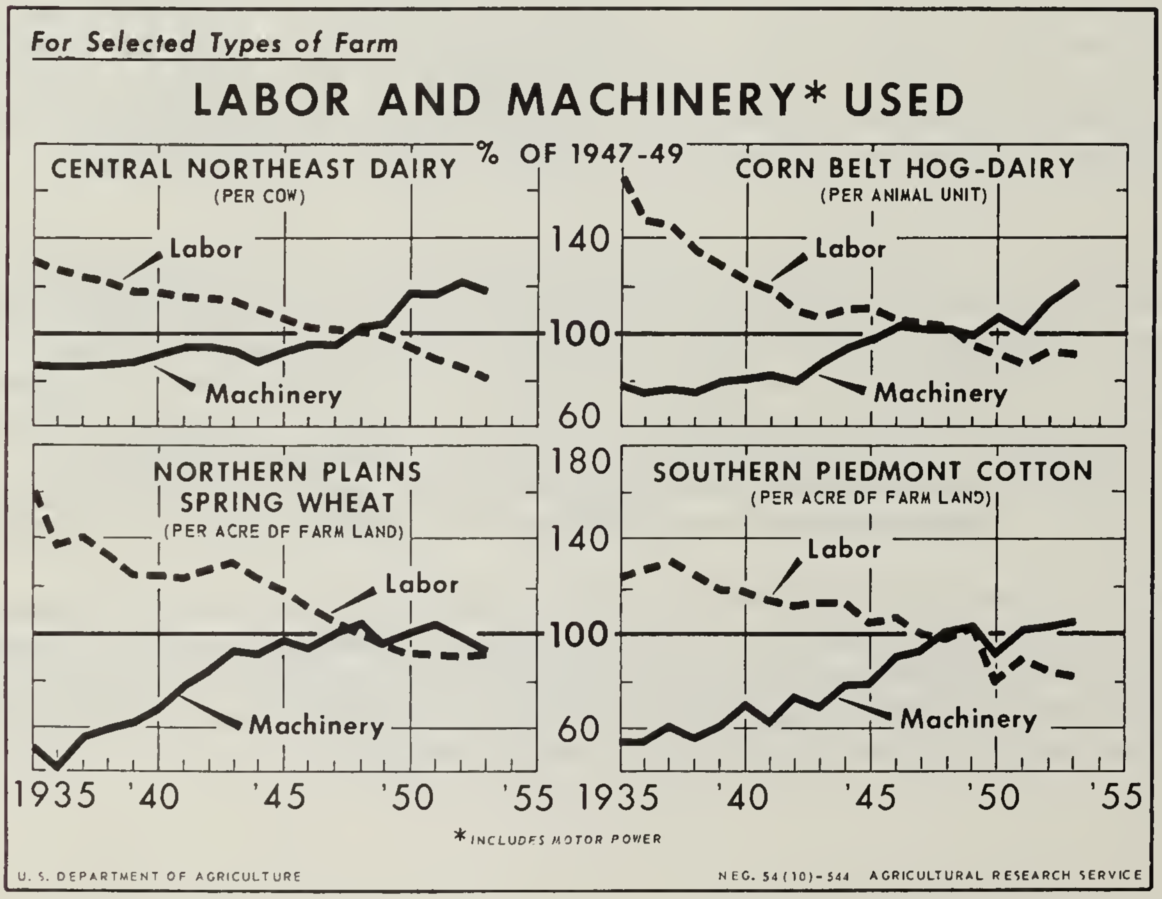

Figure 7

## Cost Situation on Selected Types of Farms

Farmers are becoming increasingly dependent upon manufactured equipment and supplies in their farming operations. Machinery, motor supplies, fertilizer, spray materials, and electricity are among the things that farmers now use in larger quantities. In 1937-41 such inputs represented from 18 to 33 percent of total farm costs for the 5 types of farms illustrated in figure 3, page 8. By 1950-53 these inputs had become more important and comprised from 21 to 43 percent of total inputs.

Items used in production that are largely farm-produced, such as livestock, feed and seed, increased also, but the combined increase in these inputs was more than offset by a decrease in hired labor. As a result, the ratio of all purchased inputs plus hired labor to total inputs has increased only slightly on most farms. It has actually decreased on cotton farms in the southern Piedmont. The third group of inputs consists of operator and family labor and management and land.

Year-to-year variations in prices of inputs from nonfarm sources are small. Prices of farm-produced items and hired labor are more flexible. They usually vary with prices received by farmers. Thus, with a continued increase in the proportion of inputs from nonfarm sources, the structure of total farm operating costs becomes more rigid.

In 1950-53 inputs from nonfarm sources other than hired labor made up 43 percent of total inputs on wheat farms in the northern Plains and on cotton farms in the southern Piedmont. These two types of farms also are among those for which the increase from 1937-41 to1950-53 in the proportion of nonfarm inputs was greatest. Although the rate of increase may have slowed up somewhat, there is no indication that it has stopped. Factory-produced items are expected to play an even more important role in farming operations in the future if cost-rate relationships remain as they are.

Although purchased inputs usually comprise from one-half to two-thirds of the total, their composition varies considerably. Figure 6 shows the relative importance of major classes of expenditures on 4 types of farms. Expenditures for power and machinery are important items of cost on all 4 types (table 12). On dairy farms, feed purchases are most important, but hired labor is also a substantial item. These are also important cost items on hog-dairy farms. On cotton farms, expenditures for fertilizer and hired labor together are as important as those for machinery. The importance of each class of expenditures varies from one type of farm to another. Distribution of these expenditures on 19 types of farms is shown in table 13.

The farm cost situation on selected types of farms serves to illustrate the varying nature of farm costs. The four types of farms for which preliminary estimates are available for 1954 are presented to illustrate the effects of changes in costs and incomes on different types

Table 12.- Cash expenditures on selected types of farms, 1953

| Items | Dairy farms, central Northeast | Hog-dairy farms, Corn Belt | Cotton farms, southern Piedmont | Wheat-small grain-livestock farms, northern Plains |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars |
| Total cash expenditures | 5,960 | 5,999 | 1,945 | 5,163 |
| Feed purchased | 2,140 | 1,042 | 111 | 52 |
| Livestock purchased | 84 | 62 | 40 | 23 |
| Other livestock expense | 188 | 185 | 9 | 58 |
| Fertilizer and lime | 276 | 269 | 469 | 0 |
| Other crop expense | 275 | 310 | 1/ 184 | 180 |
| Machinery purchased | 550 | 1,074 | 190 | 1,142 |
| Other machinery expenses | 918 | 1,239 | 437 | 2,293 |
| Farm buildings and fences | 300 | 575 | 130 | 268 |
| Labor hired | 686 | 645 | 2/ 290 | 624 |
| Taxes | 388 | 453 | 59 | 482 |
| Other | 155 | 145 | 26 | 41 |

1/ Includes $49 for insecticides and $64 for ginning.
2/ Includes cropper labor.

of farms. They do not represent a cross section of United States agriculture. Realized net farm income in 1954 of all farm operators in the United States, for example, is down about 6 percent relative to 1953, but special conditions on three of the selected farms resulted in somewhat more than a 6-percent decline in net farm income. The situation on these farms does serve to illustrate important aspects of costs which farmers in various parts of the country will want to consider in planning for 1954.

## Dairy Farms - Central Northeast

In 1954, net farm incomes on dairy farms in the Northeast probably will be nearly 20 percent less than in 1953 (table 14). This reflects a slight increase in certain costs--mainly increased quantities of purchased feed--and reductions in prices received for milk and poultry products. Although prices paid for feed declined, more feed was purchased because of an increase in the number of cows.

Table 13.- Distribution of cash farm expenditures, selected types of commercial family-operated farms, 1953

| Type of farm and location | Power and 1/ machinery | Hired labor 2/ | Fertilizer and lime | Feed 3/ | Live-stock | Buildings and fences | Taxes | Other |
|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Dairy farms: | | | | | | | | |
| Central Northeast | 25 | 11 | 5 | 36 | 1 | 5 | 7 | 10 |
| Eastern Wisconsin | 47 | 8 | 3 | 14 | 1 | 9 | 7 | 11 |
| Western Wisconsin | 45 | 7 | 4 | 14 | 1 | 10 | 9 | 10 |
| Corn Belt farms: | | | | | | | | |
| Hog-dairy | 39 | 11 | 4 | 17 | 1 | 10 | 7 | 11 |
| Hog-beef raising | 40 | 9 | 7 | 17 | 1 | 8 | 9 | 9 |
| Hog-beef fattening | 24 | 5 | 2 | 14 | 37 | 6 | 6 | 6 |
| Cash grain | 44 | 6 | 10 | 7 | 1 | 9 | 14 | 9 |
| Tobacco-livestock farms: | | | | | | | | |
| Kentucky Bluegrass | 28 | 25 | 13 | 6 | 1 | 8 | 10 | 9 |
| Cotton farms: | | | | | | | | |
| Southern Piedmont | 36 | 15 | 24 | 5 | 2 | 7 | 3 | 8 |
| Delta of Mississippi | 37 | 36 | 6 | --- | 1 | 3 | 9 | 8 |
| Black Prairie, Texas | 43 | 39 | 1 | 4 | --- | 4 | 2 | 7 |
| High Plains, Texas (nonirrigated) 4/ | 62 | 19 | --- | 5 | --- | 2 | 4 | 8 |
| High Plains, Texas (irrigated) | 60 | 31 | --- | 2 | --- | 2 | 2 | 3 |
| Spring wheat farms (No. Plains): | | | | | | | | |
| Wheat-small grain-livestock | 67 | 12 | --- | 1 | 1 | 5 | 9 | 5 |
| Wheat-corn-livestock | 55 | 8 | --- | 5 | 2 | 5 | 17 | 8 |
| Winter wheat farms: | | | | | | | | |
| Wheat-pea (Washington and Idaho) | 57 | 15 | 8 | 4 | --- | 5 | 8 | 3 |
| Sheep ranches: | | | | | | | | |
| Northern Plains | 18 | 26 | --- | 20 | 13 | 3 | 10 | 10 |
| Cattle ranches: | | | | | | | | |
| Northern Plains | 41 | 13 | --- | 8 | 7 | 5 | 14 | 12 |
| Intermountain region | 33 | 14 | --- | 7 | 15 | 4 | 22 | 5 |

1/ Including ginning, hauling and other machine work hired.
2/ Including payments to croppers.
3/ Including cost of grazing permits.
4/ Data are for 1952.

Table 14.- Gross farm income, operating expense and net farm income, selected types of farms, 1953 and expected changes for 1954

| Type of farm | Unit | 1953 | Percentage change from 1/ 1953 to 1954 |
|---|---|---|---|
| Dairy farms, Central Northeast: | | | |
| Gross farm income | Dollar | 9,270 | -6 |
| Operating expense | do. | 5,955 | 2 |
| Net farm income | do. | 3,315 | -19 |
| Cows, 2 years old and over | Number | 23.4 | 6 |
| Hog-dairy farms, Corn Belt: | | | |
| Gross farm income | Dollar | 11,794 | -3 |
| Operating expense | do. | 5,899 | 2 |
| Net farm income | do. | 5,895 | -8 |
| Pork produced | 100 pounds | 233.3 | 3 |
| Cotton farms, Southern Piedmont: | | | |
| Gross farm income | Dollar | 3,287 | -21 |
| Operating expense | do. | 2,025 | -16 |
| Net farm income | do. | 1,262 | -28 |
| Cotton | Acre | 15.8 | -23 |
| Other crops | do. | 37.2 | 1 |
| Wheat-small grain-livestock farms, Northern Plains: | | | |
| Gross farm income | Dollar | 9,047 | -3 |
| Operating expense | do. | 5,267 | -2 |
| Net farm income | do. | 3,780 | -6 |
| Wheat | Acre | 213.2 | -19 |
| Other crops | do. | 208.0 | 21 |
| Fallow land | do. | 112.1 | 3 |

1/ Tentative estimates.

Dairy farmers are always looking for opportunities to reduce costs and improve net incomes, particularly at times like these when prices of milk have declined without corresponding declines in prices of cost items. Such a price-cost squeeze on northeastern dairy farmers has been under way during the last 2 years. It has meant a lower net income for the average producer. But some farmers have been able to reduce their costs and thereby maintain their incomes at a relatively high level. They have done this by making wider use of improved technology in breeding, feeding, labor utilization, and other aspects of dairy farm management. This has meant cows capable of producing more milk. It has meant improvement in forage production and harvesting to provide more and better roughage. It has meant greater use of labor-saving equipment and techniques to allow the labor force to operate more efficiently (fig. 7). In most cases the result has been more milk per farm and per hour of man labor.

These same adjustments appear to offer the main hope for reducing costs and for maintaining or improving net incomes on dairy farms in the Northeast in 1955 and the years beyond. Many farmers have not yet made full use of available technical knowledge; they can make further adjustments over the years to improve production efficiency. The result will usually be more milk on the farm in question, but this may be partially offset by reductions on other farms whose operators find better opportunities in other farm enterprises or in off-farm employment.

## Hog-Dairy Farms, Corn Belt

Net farm incomes in 1954 apparently will be about 8 percent lower than in 1953 on hog-dairy farms in northeastern Iowa and adjacent parts of Illinois and Wisconsin but farm incomes in this area will still be at a relatively high level. Farmers in this area have had good weather in recent years and total farm production has been well above the 1947-49 average.

Many of the opportunities for reducing costs on these hog-dairy farms are similar to those mentioned above for dairy farms in the Northeast. Ways of reducing costs of producing hogs include: (1) Farrowing practices that will save a high percentage of the pigs born, and (2) feeding practices that will supply adequate proteins, vitamins, and minerals to pigs, especially from the time they are weaned until they weigh 100 pounds. Recent developments in the use of antibiotics in feeds are important from the standpoint of low-cost hog production.

## Cotton Farms - Southern Piedmont

If the price of cotton for 1954 is the same as the average for the first 9 months of this year, net farm incomes on southern Piedmont cotton farms will probably average about $900, or nearly 30 percent below

1953. Gross farm incomes will be down 20 percent while farm expenses will be down only 15 percent. Price-cost relationships are only slightly less favorable. Most of the reduction is due to a smaller volume produced. Lower production results from smaller acreages of cotton and lower yields. Unfavorable weather caused lower yields for all major crops. Much of the land taken out of cotton remained idle.

Farm operating costs declined largely because of the lower acreage and yield of cotton. But the decline in costs was considerably less than the decline in income. Important costs such as machinery depreciation are relatively fixed.

Since 1940 most of the increase in net farm incomes on these farms has resulted from higher prices and more favorable price-cost-relationships. Greater physical efficiency has made a small contribution to higher net farm incomes. If present price-cost relationships prevail for the next few years, any improvement in net farm incomes must come largely from greater physical efficiency including such things as better use of land and increase in size of farm. More complete utilization of land taken out of cotton offers some opportunity to improve efficiency over 1954. Oats were the main crop grown in place of cotton this year. In the long run the addition of a supplementary beef-cattle enterprise would probably improve the efficiency of many of the larger cotton farms.

Factors that contribute to higher yields per acre such as higher fertilization, better land selection, improved insect control, better cultural practices, and better varieties have contributed most to improved physical efficiency. Considerable opportunity remains for improvement along this line. Some additional farms may shift from mule to tractor power. Larger farms have some possibilities for reducing costs through the use of more anhydrous ammonia, herbicides, and mechanical choppers, and pickers or strippers. A larger volume of output per worker is of primary importance in the longer run.

## Wheat-Small Grain-Livestock Farms

Net farm incomes on wheat-small grain-livestock farms in the northern Plains are expected to average about $3,550 in 1954, or about 5 percent below 1953. Unusually low yields were a major factor in the reduction in income in 1954. Crop yields will probably average about 8 to 10 percent below 1953, and 20 to 25 percent below the most recent 10-year average. Most of the decline in crop yields is due to rust damage on wheat. Livestock production on these farms is expected to be higher in 1954 than in 1953 and at about the highest level since 1944.

Prices received by wheat-small grain-livestock farmers in 1954 are expected to average about 5 percent below 1953, while prices paid will remain about the same. Reduction in farm expenses arise primarily from reduced crop and machinery operating expense. But the decline in these costs was less than the decline in farm income.

Opportunities for reducing costs on existing wheat farms of this type are perhaps fewer than on many other types of farms. As pointed out earlier a high proportion of the inputs used on these farms are obtained from nonfarm sources. This makes the cost structure on these farms fairly rigid. Farmers who contemplate the purchase of new machinery during the next year would do well to consider the effects of such purchases on costs and net income. Costs of gas, oil, and tires and other machinery-operating expenses are also a large part of total farm expenses; they may offer some opportunity for cost reduction. For example, the costs of operating automobiles and trucks on farms with about equal volumes of production vary greatly.

Unless total costs can be reduced, maintaining a large volume of production will be essential if unit costs are to be held down Assuming that wheat farmers will comply with a further cut in acreage of wheat in 1955, the problem of maintaining this high volume of production becomes more acute. Each farmer must arrive at the combination of fallow land and crops other than wheat that will provide the largest sustained net income. If the increase in yields of barley, oats, and flax following fallow are as great as the increase in yields of wheat (or even slightly less), it may pay to increase the acreage of fallow in 1955 to obtain larger production of these crops in later years.

Looking further into the future wheat farmers may be able to reduce costs by increasing the size of their farms and by using their land resources more extensively. Current studies indicate that the demand for wheat probably will not change appreciably in the foreseeable future, but demand for cattle is likely to increase considerably. A shift to more livestock will enable these farmers to utilize their labor more fully. Much of the labor used on these farms now is concentrated in relatively short seasons of planting and harvest.

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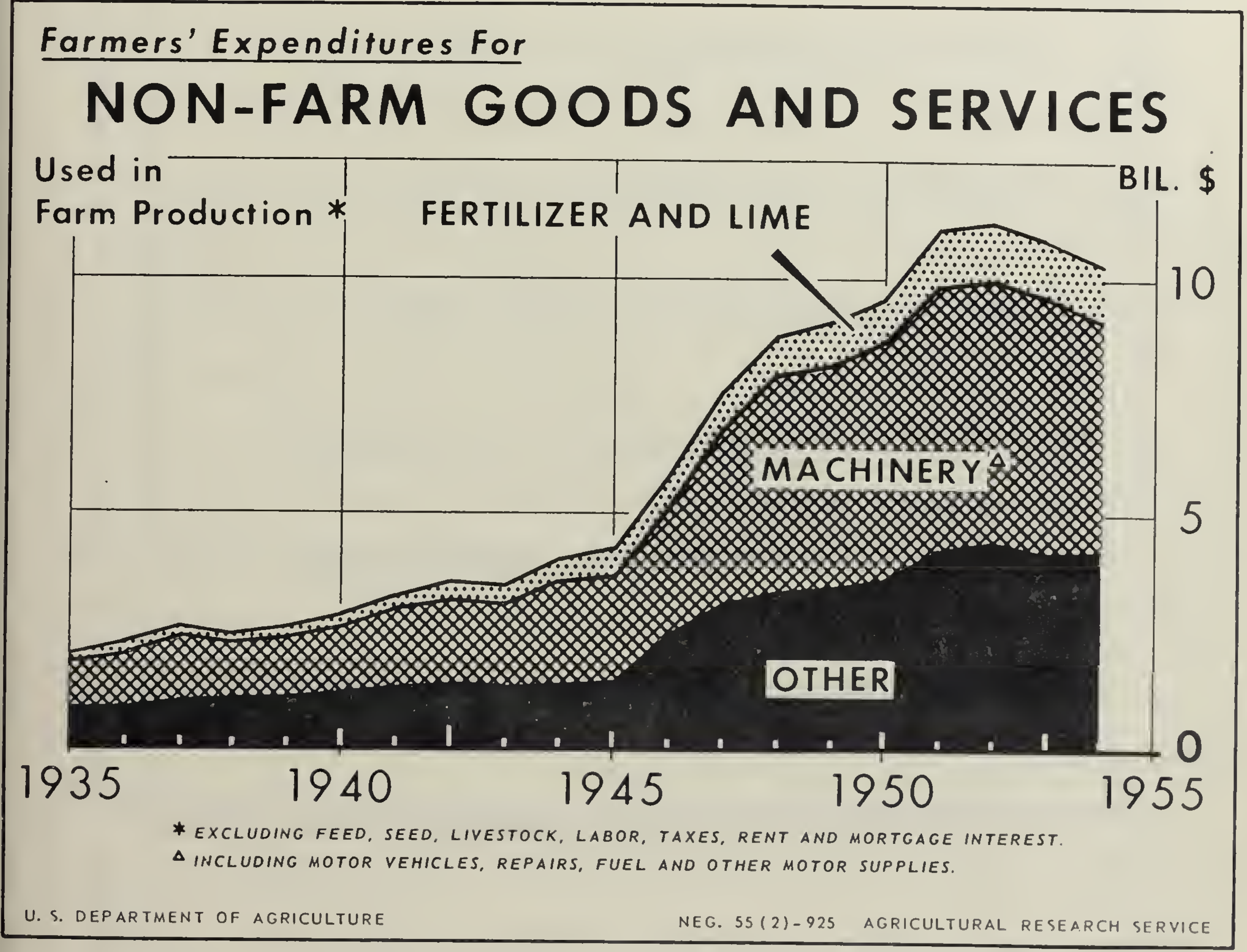

In recent years, farmers have spent more than $10 billion annually for nonfarm goods and services used in farm production. This is more than 4 times as much as they spent annually for such goods and services in 1935-39. Price increases account for about half of the increase in these expenditures.

Goods and services used in production: Prices paid by farmers and farm wage rates, United States
Index numbers (1935-39 = 100)

| Year | Commodities, interest, taxes and wage rates 1/ | Commodities only | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti- lizer | Seed | Wage rates 2/ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910-14 | 79 | 80 | 95 | 81 | --- | --- | 65 | 71 | 69 | 98 | 84 | 82 |
| 1915-19 | 118 | 121 | 149 | 123 | --- | --- | 85 | 117 | 97 | 141 | 127 | 122 |
| 1920-24 | 131 | 117 | 133 | 94 | --- | --- | 101 | 130 | 116 | 141 | 124 | 149 |
| 1925-29 | 131 | 116 | 127 | 123 | 127 | 89 | 101 | 123 | 111 | 129 | 123 | 152 |
| 1930-34 | 101 | 90 | 85 | 71 | 99 | 89 | 95 | 103 | 96 | 106 | 81 | 100 |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 100 | 99 | 95 | 115 | 96 | 101 | 100 | 104 | 101 | 96 | 86 | 107 |
| 1941 | 106 | 105 | 103 | 130 | 99 | 107 | 101 | 111 | 108 | 96 | 82 | 125 |
| 1942 | 121 | 119 | 126 | 152 | 106 | 116 | 107 | 123 | 118 | 107 | 111 | 163 |
| 1943 | 138 | 132 | 149 | 173 | 109 | 121 | 111 | 137 | 123 | 114 | 139 | 217 |
| 1944 | 148 | 140 | 165 | 163 | 111 | 131 | 114 | 144 | 131 | 116 | 158 | 263 |
| 1945 | 156 | 142 | 164 | 178 | 111 | 135 | 115 | 146 | 134 | 118 | 162 | 297 |
| 1946 | 168 | 154 | 190 | 202 | 113 | 139 | 119 | 147 | 146 | 119 | 167 | 320 |
| 1947 | 192 | 181 | 225 | 252 | 124 | 161 | 135 | 159 | 191 | 131 | 192 | 346 |
| 1948 | 211 | 202 | 238 | 312 | 138 | 181 | 157 | 169 | 212 | 143 | 223 | 365 |
| 1949 | 204 | 192 | 196 | 277 | 140 | 199 | 176 | 176 | 210 | 147 | 202 | 354 |
| 1950 | 210 | 198 | 200 | 324 | 143 | 199 | 180 | 176 | 215 | 141 | 193 | 351 |
| 1951 | 232 | 220 | 225 | 395 | 150 | 212 | 194 | 189 | 239 | 149 | 197 | 388 |
| 1952 | 237 | 221 | 239 | 331 | 151 | 222 | 201 | 200 | 240 | 153 | 223 | 416 |
| 1953 | 227 | 204 | 216 | 234 | 154 | 220 | 203 | 201 | 241 | 154 | 205 | 424 |
| 1954 | 227 | 203 | 215 | 238 | 156 | 222 | 205 | 196 | 241 | 152 | 192 | 421 |
| Jan. | 229 | 205 | 212 | 251 | --- | 220 | --- | --- | --- | --- | --- | 434 |
| Feb. | 230 | 205 | 214 | 251 | --- | --- | --- | --- | --- | --- | 192 | --- |
| Mar. | 230 | 206 | 217 | 249 | 158 | 222 | 205 | 198 | 240 | 152 | 192 | --- |
| Apr. | 229 | 206 | 220 | 253 | --- | --- | --- | 196 | --- | 151 | 192 | 419 |
| May | 229 | 206 | 222 | 252 | --- | --- | --- | --- | --- | --- | 194 | --- |
| June | 227 | 203 | 216 | 236 | 156 | 222 | 205 | 194 | 239 | --- | --- | --- |
| July | 224 | 199 | 213 | 210 | --- | 221 | --- | --- | --- | --- | --- | 417 |
| Aug. | 225 | 202 | 215 | 224 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 226 | 202 | 215 | 231 | 155 | 221 | 205 | 194 | 242 | 152 | 190 | --- |
| Oct. | 225 | 202 | 211 | 234 | --- | --- | --- | --- | --- | --- | --- | 415 |
| Nov. | 225 | 202 | 211 | 238 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 225 | 202 | 212 | 229 | 156 | 220 | 205 | 197 | 243 | --- | --- | --- |
| 1955 | | | | | | | | | | | | |
| Jan. | 230 | 205 | 213 | 247 | --- | 224 | --- | --- | --- | --- | --- | 431 |
| Feb. | 232 | 206 | 212 | 250 | --- | --- | --- | --- | --- | --- | 214 | --- |

1/ Revised to reflect revisions in interest and tax indexes. 2/ Simple average of quarterly indexes seasonally adjusted.

Note: For a list of items included in this table see "Agricultural Prices," Agricultural Marketing Service, September 30, 1954.

# THE FARM COST SITUATION

Approved by the Outlook and Situation Board, March 1, 1955

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## GENERAL SITUATION

Farmers' costs have not changed significantly since last spring. The index of prices paid by farmers for goods and services used in production, including interest, taxes, and wage rates was less than 1 percent higher in mid-February than it was a year earlier and little overall change is expected this year.

The most important change in farm costs in the last year was a 12 percent increase in retail prices of seeds. Supplies are smaller and the demand is greater. Thousands of acres of legumes and grasses will have to be sown this spring or next fall because of severe drought in the summer and fall of 1954. Furthermore, many acres which normally would be planted to such crops as wheat and corn, now in surplus supply, are expected to be seeded to hay and pasture crops for livestock.

Farm wage rates are slightly lower than a year ago in some areas. Farm property taxes are expected to be about 4 percent higher in 1955 than in 1954. Interest rates are expected to be firm. Prices of other major categories of production items are about the same as they were last spring.

The cost-price squeeze has tightened appreciably. The parity ratio at 87 in the last quarter of 1954 was 4 points below the last quarter of 1953. Almost all of the decline was due to a reduction in prices received. Prices paid were up less than 1 percent.

Relative changes in farm cost rates from one year to another usually are not great. Sometimes, however, these short-run changes are significant. And it is frequently possible to make profitable adjustments to short-term shifts. For example, when the retail price of Kentucky bluegrass seed went up to about $2.00 a pound in 1954, many farmers found it advantageous to use cheaper substitutes.

More important in shaping production plans to reduce unit costs, however, are the relative changes in farm cost rates which accumulate over a period of years and which appear likely to persist. For example, farm wage rates have increased more than 300 percent since prewar, while prices of farm machinery have increased about 100 percent (fig. 1). Among the other important items that farmers buy that have increased relatively little are fertilizer and gasoline. Such changing relationships among cost rates have had a great deal to do with the reduction in the quantity of labor used on farms and the increases in farm mechanization, size of farms, and farm output.

Most of the relative changes in cost rates took place in World War II (fig. 2). Since 1947 the relationships among important cost rates have been fairly stable but farmers continue to adjust their farming operations to take advantage of these changes in costs.

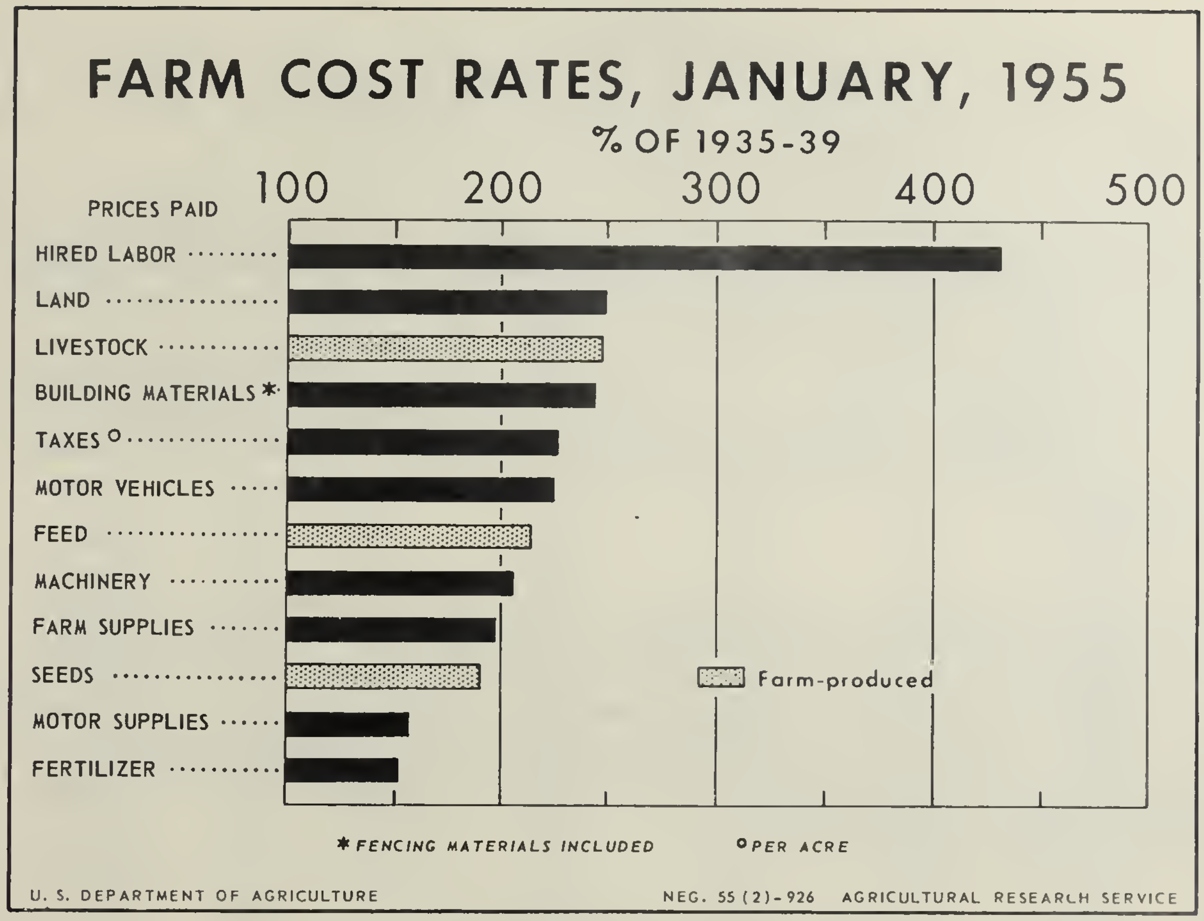

Figure 1

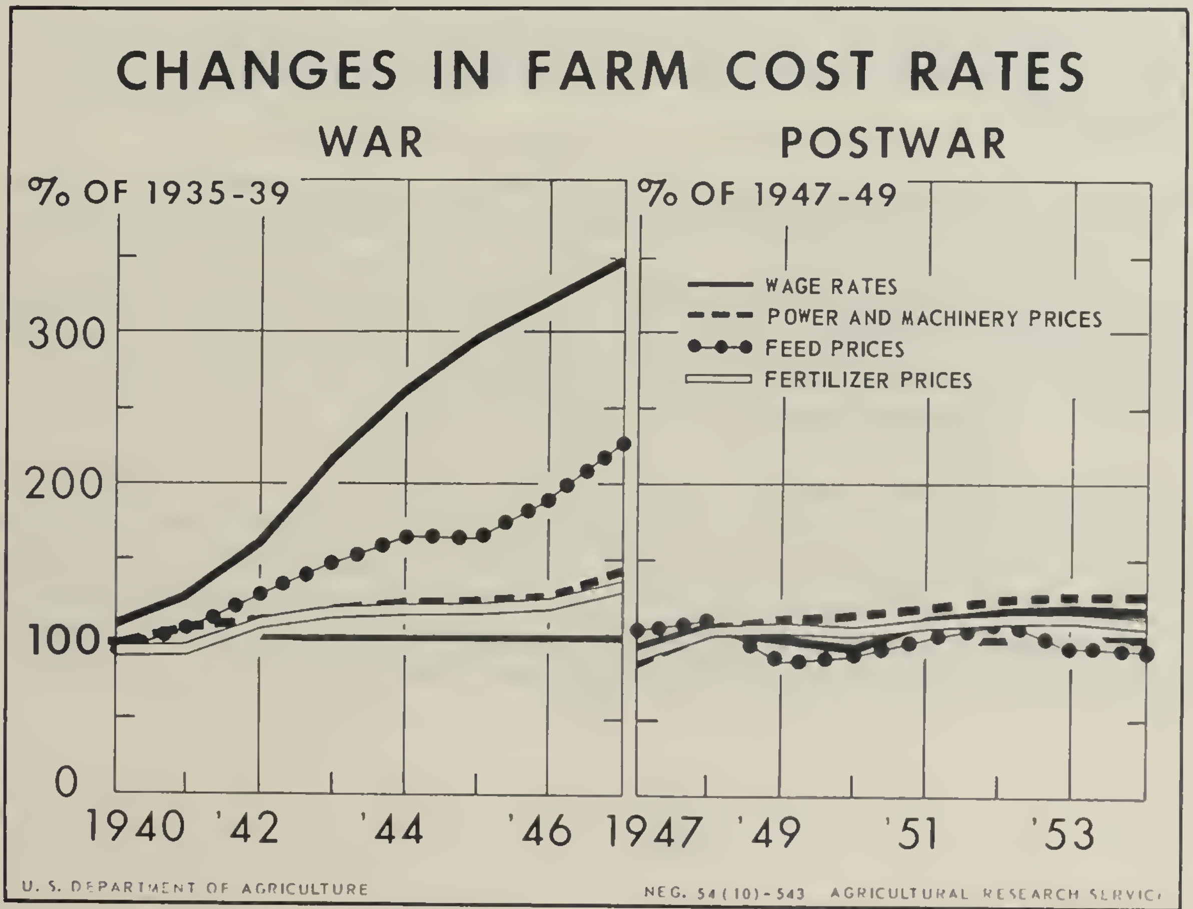

Figure 2

## FARM LABOR

Farm wage rates in 1954 averaged only slightly lower than in 1953. The declines were generally in the Southern and Western States.

The number of workers available for employment on farms this year is expected to be generally adequate to satisfy the demand. The supply of seasonal workers from domestic sources is expected to be about the same as last year, if the present high level of industrial activity continues throughout the year. Mexican Nationals and other foreign workers are expected to be available to supplement the supply from domestic sources. The supply of experienced year-round farm workers will probably continue tight, and effective recruitment and placement programs will be needed.

The 1955 acreage allotment for cotton, a big labor-using crop, is about 1.6 million acres less than the acreage in cultivation last July 1. Much land taken out of cotton will be diverted to crops and uses that take less labor. With average weather, this points to a slackening in labor needs in the cotton-chopping and cotton-picking seasons. Adjustments in acres of crops in other major farming areas will affect total labor requirements very little.

## FARM POWER AND MACHINERY

Current index numbers of prices paid by farmers for all kinds of farm machinery and equipment, including tractors, are more than double what they were in 1935-39. Most of this increase came before 1951. Present indications are that prices will be about the same in 1955 as they were in 1954.

Prices of machines and tractors on which index numbers of prices paid by farmers are based include the attachments and accessories with which the machines are equipped. In general, the postwar machines have more attachments and accessories than did the prewar machines. The index of wholesale prices of farm machinery, which reflects changes in prices after the effects of these additional features have been removed, is currently about 75 percent above 1935-39.

Following the outbreak of hostilities in Korea in June 1950, purchases of farm machinery in 1951 reached a record high and farmers spent an unusually high percentage of their incomes for machinery and equipment. Since 1951 farmers' purchases of machinery and equipment have declined. Domestic shipments of farm machines and equipment in 1954 were slightly more than 10 percent below the 1953 shipments and they were the lowest of

Table 1.- Labor used on farms, labor productivity, wage rates and related data, United States, 1940-54 1/

Index numbers (1947-49=100)

| Year | Farm employment | | | Man-hours of farm work 3/ | Farm output 4/ | Farm output per man-hour | Gross farm income per man-hour 5/ | Farm wage rates 6/ |
|---|---|---|---|---|---|---|---|---|
| | Total 2/ | Family 2/ | Hired | | | | | |
| 1940 | 107 | 104 | 117 | 120 | 83 | 69 | 28 | 30 |
| 1941 | 104 | 101 | 116 | 117 | 86 | 74 | 35 | 35 |
| 1942 | 103 | 100 | 112 | 122 | 96 | 79 | 46 | 46 |
| 1943 | 102 | 101 | 107 | 121 | 94 | 78 | 56 | 61 |
| 1944 | 100 | 100 | 98 | 120 | 97 | 81 | 60 | 74 |
| 1945 | 98 | 99 | 93 | 112 | 96 | 86 | 68 | 83 |
| 1946 | 101 | 102 | 96 | 108 | 98 | 91 | 81 | 90 |
| 1947 | 102 | 102 | 99 | 103 | 95 | 92 | 99 | 97 |
| 1948 | 101 | 101 | 102 | 100 | 104 | 104 | 103 | 103 |
| 1949 | 97 | 97 | 99 | 97 | 101 | 104 | 98 | 100 |
| 1950 | 91 | 91 | 91 | 89 | 100 | 112 | 108 | 99 |
| 1951 | 88 | 88 | 87 | 91 | 103 | 113 | 122 | 109 |
| 1952 | 85 | 85 | 84 | 89 | 107 | 120 | 122 | 117 |
| 1953 | 84 | 84 | 85 | 88 | 108 | 123 | 120 | 119 |
| 1954 7/ | 83 | 82 | 84 | 86 | 108 | 126 | 118 | 119 |

---

1/ Data on farm employment, wage rates, and farm income are from the Agricultural Marketing Service.

2/ Includes farm operators and members of their families who work without wages.

3/ Total man-hours of farm work in terms of the time required by average adult male workers.

4/ Net calendar-year production for eventual human use.

5/ Because of the increase in volume of output and the increase in the price of farm products, gross farm income per man-hour has increased at about the same rate as have farm wage rates.

6/ Simple average of seasonally adjusted quarterly indexes.

7/ Preliminary.

any year of the postwar period. Although domestic production of farm machinery in 1954 was almost a third below the record 1951 production, the volume was large compared with that in any year before World War II.

Farmers' purchases of machinery and equipment, in the short run, are fairly closely related to current and prospective farm incomes. Farmers' incomes in 1955 are expected to approach those of 1954, and their total purchases of machines and equipment will probably be about the same as their 1954 purchases.

The number of horses and mules now on farms is less than 20 percent of the 1918 number and about 30 percent of the 1935-39 number (table 2).

Retail prices of gasoline in 1954 were higher than for any previous year, but they were only about 45 percent above those of 1935-39. In most States, 1955 prices are expected to show little change from the 1954 prices, but in some States increased gasoline taxes are expected to result in higher prices for non-tax exempt uses.

Tire prices in 1954 were about 55 percent above the prewar prices. They were at peak levels in 1951 but in 1952 they declined and since then they have shown little change. In the current year some tire manufacturers have increased their prices moderately, and this may be reflected at the retail level.

## FEED

The supply of feed grains for 1954-55 is 5 percent above last year, and it is expected to be ample for all current needs. The carryover next fall probably will be a little larger than the record stocks of a year earlier. In total, there are about 3 to 4 percent more grain-consuming livestock in the current feeding year, which began October 1, 1954.

Compared with a year earlier, on January 1, 1955 the number of milk cows was down about 1 percent, that of cattle on feed was up 8 percent; that of other beef cattle was up 1 percent; the number of hens and pullets on farms was up 2 percent; and the number of horses and mules was down 9 percent. It is expected that broiler production in 1955 will average close to 1954 production, and farmers intend to raise about 18 percent fewer chickens for laying flock replacement. Farmers' January intentions were to raise about the same number of heavy-breed turkeys but 11 percent fewer of the light breeds. The fall pig crop of 1954 was 16 percent above a year earlier, and farmers intended in January to have 5 percent more sows farrow 1955 spring pigs than last year.

Table 2.- Farm power and machinery and related data, United States, 1935-39 average and 1940-54

Index numbers (1935-39=100)

| Year or period | Number on farms, January 1 1/ | | | | | | Volume on farms, January 1 2/ | | Gross farm income calendar year 3/ | Prices received by farmers |
|---|---|---|---|---|---|---|---|---|---|---|
| | Horses and mules all ages | Work stock 3 years old and over | Colts under 1 year of age | Tractors | Automobiles | Motortrucks | All machinery and equipment other than tractors and other motor vehicles | All farm power (including work animals) machines and equipment | | |
| 1935-39 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1940 | 92 | 89 | 101 | 124 | 106 | 108 | 118 | 106 | 105 | 93 |
| 1941 | 90 | 87 | 98 | 135 | 111 | 113 | 126 | 109 | 132 | 115 |
| 1942 | 87 | 84 | 85 | 152 | 120 | 119 | 141 | 116 | 179 | 147 |
| 1943 | 84 | 83 | 69 | 169 | 112 | 132 | 158 | 121 | 220 | 179 |
| 1944 | 80 | 81 | 62 | 178 | 107 | 142 | 162 | 121 | 232 | 182 |
| 1945 | 76 | 77 | 54 | 195 | 106 | 153 | 178 | 126 | 244 | 192 |
| 1946 | 71 | 73 | 42 | 206 | 109 | 159 | 197 | 131 | 279 | 219 |
| 1947 | 64 | 67 | 35 | 220 | 112 | 175 | 219 | 137 | 328 | 256 |
| 1948 | 59 | 62 | 31 | 240 | 108 | 195 | 252 | 147 | 333 | 266 |
| 1949 | 54 | 57 | 28 | 266 | 110 | 212 | 286 | 158 | 306 | 231 |
| 1950 | 49 | 52 | 23 | 290 | 108 | 227 | 310 | 166 | 309 | 239 |
| 1951 | 45 | 48 | 19 | 317 | 110 | 237 | 337 | 175 | 356 | 280 |
| 1952 | 40 | 42 | 16 | 335 | 112 | 248 | 366 | 184 | 355 | 267 |
| 1953 | 35 | 38 | 15 | 354 | 113 | 262 | 379 | 188 | 342 | 239 |
| 1954 | 32 | 34 | 14 | 370 | 114 | 272 | 381 | 190 | 329 | 231 |
| 1955 4/ | 29 | 31 | 13 | | | | | | | |

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1/ The 1935-39 average was for horses and mules all ages, 15,750,000 head; for workstock 13,700,000 head; for colts 744,000 head; for tractors 1,244,000; for automobiles 3,896,000; and there were 973,000 motortrucks.

2/ In terms of 1935-39 prices.

3/ Includes Government payments.

4/ Preliminary.

The January 1, 1955 supply of hay, estimated at 72 million tons, is about 4 percent larger than a year earlier, and the number of roughage-consuming animals is up less than 1 percent. Numbers of hay-consuming livestock have trended upward for several years, but they are still below the 3 previous peaks reached in 1919, 1934, and 1944. Stocks of hay were larger than last year in most of the North Atlantic and North Central States. On the other hand, stocks were the shortest on record in the South Atlantic and South Central regions. Hay stocks were low in about half of the Western States and adequate or surplus in the other half. The disappearance of hay up to January 1 was relatively small mainly because of the mild weather. The increased use of grass silage was also a factor in reducing hay requirements.

Prices paid by farmers in February for feed were about the same as a year earlier but prices received by farmers for feed grains and hay were down 3 percent (table 3). For the next few months prices of feed are expected to average near or a little below those of a year earlier. Lower support prices for some feed grains and the prospects for 1955 feed grain crops will influence prices in early summer. The index of prices of all livestock and livestock products on February 15, 1955, was down about 12 percent from a year earlier. Prices of all livestock were down except beef cattle, lambs and broilers. The percentage drop was greatest for hogs, turkeys, eggs, and farm chickens.

In February 1955 returns per $100 of feed were below those of a year earlier for eggs, turkeys, butterfat, and hogs; not much different for milk, sheep and beef raising; and above those of a year earlier for broilers (table 4). All livestock enterprises, except eggs and broilers, were much below average in returns per $1.00 of feed. However, returns were better in February 1955 than they were in September 1954 for all enterprises except hogs. Returns from cattle feeding in 1954-55 may not be as large as they were in 1953-54, if the selling prices of fat cattle in the next several months average about the same as a year ago. However, in February 1955, prices of fat cattle were considerably higher than in 1954, even though the number of cattle on feed January 1, 1955, was 8 percent higher than a year earlier.

## SEEDS

Retail prices of seeds have increased sharply since last spring. The index of prices paid by farmers for seeds was 12 percent higher in mid-February than it was a year earlier.

Prices of many grass and legume seeds are a third to a half higher than a year ago, and nearly all are higher than last fall. Largest increases in the mid-February retail prices were reported for seeds in this order: red clover (up 74 percent), alsike clover, orchardgrass, sericea lespedeza, timothy, Kobe lespedeza, improved varieties of alfalfa, Sudangrass, Grimm alfalfa, white clover, seed potatoes, common alfalfa, and

Table 3.- Average prices of feed in the United States, February 15, 1955, with comparisons

| Item | Unit | Feb. 15, 1953 | Feb. 15, 1954 | Sept. 15, 1954 | Feb. 15, 1955 |
|---|---|---|---|---|---|
| | | Dollars | Dollars | Dollars | Dollars |
| Prices received by farmers | | | | | |
| Corn | Bushel | 1.43 | 1.43 | 1.53 | 1.40 |
| Oats | do. | .77 | .78 | .71 | .76 |
| Barley | do. | 1.28 | 1.15 | 1.05 | 1.08 |
| Sorghum grain | Cwt. | 2.65 | 2.32 | 2.16 | 2.26 |
| Hay, baled | Ton | 25.60 | 23.70 | 22.00 | 23.30 |
| Feed grains and hay, Index number (1935-39=100) | | 223 | 217 | 219 | 211 |
| Prices paid by farmers | | | | | |
| Mixed dairy feed (16 percent) | Cwt. | 4.19 | 3.98 | 3.82 | 3.88 |
| Laying mash | do. | 5.02 | 4.86 | 4.90 | 4.77 |
| Broiler mash | do. | 5.38 | 5.26 | 5.33 | 5.18 |
| Cottonseed meal | do. | 5.03 | 4.02 | 4.45 | 4.45 |
| Soybean meal | do. | 4.93 | 5.01 | 5.52 | 4.72 |
| Linseed meal | do. | 5.36 | 4.91 | 4.61 | 4.76 |
| Meat scrap | do. | 5.76 | 5.43 | 6.18 | 5.35 |
| Bran | do. | 3.58 | 3.27 | 3.01 | 3.08 |
| Middlings | do. | 3.65 | 3.33 | 3.18 | 3.19 |
| Alfalfa hay, baled | Ton | 39.20 | 35.90 | 34.30 | 35.90 |
| Prices paid by farmers for feed, Index number (1935-39=100) | | 228 | 214 | 215 | 212 |
| Average value of concentrate ration fed to poultry and milk cows 1/ | | | | | |
| Fed to poultry | Cwt. | 3.96 | 3.86 | 3.89 | 3.80 |
| Fed to milk cows in milk-selling areas | Cwt. | 3.69 | 3.44 | 3.35 | 3.32 |
| Fed to milk cows in cream-selling areas | Cwt. | 3.22 | 3.06 | 2.98 | 2.93 |

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1/ Value of the corn, oats, oilmeal, millfeed, commercial mixed feed, and so on making up 100 pounds of "grain" ration.

Agricultural Marketing Service.

Table 4.- Returns per $1.00 of feed cost of livestock enterprises, United States, Feb. 15, 1955, with comparisons 1/

| Livestock enterprise or product | 1937-51 average | Feb. 15, 1953 | Feb. 15, 1954 | Sept. 15, 1954 | Feb. 15, 1955 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.50 | 1.52 | 1.69 | 1.24 | 1.48 |
| Broilers | 1.64 | 1.59 | 1.32 | 1.35 | 1.63 |
| Turkeys | 1.90 | 1.61 | 1.61 | 1.35 | 1.48 |
| Milk | 1.93 | 1.85 | 1.81 | 1.85 | 1.78 |
| Butterfat | 1.53 | 1.33 | 1.35 | 1.21 | 1.22 |
| Hogs | 1.67 | 1.65 | 2.16 | 1.57 | 1.43 |
| Sheep raising | 1.60 | 1.27 | 1.32 | 1.40 | 1.33 |
| Beef raising | 1.76 | 1.61 | 1.42 | 1.44 | 1.47 |
| Cattle feeding | 2/ 1.25 | 1953-54<br>1.46 | | 1954-55<br>3/ | |
| | Index numbers (1937-51=100) | | | | |
| Eggs | 100 | 101 | 113 | 65 | 99 |
| Broilers | 100 | 97 | 80 | 82 | 99 |
| Turkeys | 100 | 85 | 85 | 71 | 78 |
| Milk | 100 | 96 | 94 | 85 | 92 |
| Butterfat | 100 | 87 | 88 | 71 | 80 |
| Hogs | 100 | 100 | 129 | 95 | 86 |
| Sheep raising | 100 | 79 | 82 | 82 | 83 |
| Beef raising | 100 | 91 | 81 | 79 | 84 |
| Cattle feeding | 100 | 1953-54<br>117 | | 1954-55<br>3/ | |

1/ Quantities of feed used in calculating the cost of feed follow: Per dozen eggs - 7 lbs. poultry ration; per lb. of broiler - $4\frac{1}{2}$ lbs. chick starter, 1935-39, $3\frac{1}{2}$ lbs. chick starter, 1951-53, 3 lbs. broiler mash, 1954-55; per lb. of turkey - $5\frac{1}{2}$ lbs. poultry ration before 1950; $5\frac{1}{4}$ lbs. 1950-53, 5 lbs. 1954-55; per 100 lbs. hogs - $7\frac{1}{2}$ bu. corn plus 20 lbs. soybean meal, per 100 lbs. milk - 30 lbs. concentrate ration fed to milk cows in milk-selling areas plus the value of 110 lbs. hay; per lb. of butterfat - $7\frac{1}{2}$ lbs. of concentrate ration fed to milk cows in cream-selling areas plus the value of $27\frac{1}{2}$ lbs. hay in Minnesota and Iowa; per 100 lbs. beef cattle - 3 bu. corn plus 600 lbs. hay; per 100 lbs. sheep and lambs - 2 bu. corn plus 1,500 lbs. hay. Assumed 20 lbs. wool produced for each 100 lbs. sheep and lamb produced. The quantity of hay for milk cows, beef cattle and sheep, includes an allowance for silage and pasture. Feed nutrients from pasture assumed to cost $\frac{1}{4}$ as much as nutrients from hay. Cattle feeding returns are based on table 1, Livestock and Meat Situation, A.M.S., August 25, 1954, which is based on Corn Belt experience. 2/ 1920-52 average. 3/ Season not completed.

sweetclover. Declines from last year were reported for only 5 of 33 seeds - Kentucky bluegrass (down 35 percent), common ryegrass, seed oats, seed barley, and Korean lespedeza. The declines were less than 10 percent for each of these seeds, except Kentucky bluegrass, prices of which set a record last year. However, prices of 10 were less than 10 percent higher than a year earlier.

The supply (1954 production plus carryover) of 18 seeds for sowing in the 1954-55 season and for which production estimates were made was 699 million pounds, 7 percent less than in the preceding year and 2 percent below the 1943-52 average. Imports of these seeds July 1, 1954-January 31, 1955, totaled 27 million pounds, a fourth less than for the same period a year earlier and a fifth less than the average for the previous 5 years. But July 1-November 30, 1954, exports of grass and legume seeds, totaling 23 million pounds, were more than 5 times as large as a year ago and nearly 5 times the 5-year average for the same period, thus reflecting the short seed crops in Europe last year. The net supply of these seeds (production plus carryover plus imports minus exports) available for sowing in this country is 10 percent less than last year and 5 percent below average.

Seeds in shortest domestic supply compared with last year, taking into consideration imports and exports, are orchardgrass, Sudangrass, and red and white clover. Supplies of Kentucky bluegrass, red fescue, and Chewings fescue are much larger than last year. Compared with the 10-year average, current supplies are shortest for redtop, lespedeza, particularly sericea, crested wheatgrass, timothy, white clover, and red clover. They are largest for the fescues, Ladino clover, bentgrass, and alfalfa.

High prices of most seeds, together with smaller supplies than a year earlier, are expected to decrease sales this year notwithstanding the fact that there is a greater potential demand for seeds this year than last. Thousands of acres of legumes and grasses will have to be sown this spring or next fall because of the severe drought in the summer and fall of 1954. Furthermore, many acres which normally would be planted to such crops as wheat and corn, now in surplus supply, are expected to be sown to hay and pasture crops for livestock. Because of the below-average supplies of legume and grass seeds and the strong potential demand, farmers should not delay the purchase of seeds needed for spring planting.

## FERTILIZER

Prices of plant nutrients in fertilizer, on the average, are slightly lower than they were a year ago. Reductions in price apply especially to high analysis fertilizers. Those containing smaller percentages of plant nutrients are largely unchanged. Very few increases in quotations have been noted on recent price lists.

From the viewpoint of farm costs, the fact that the increase in the price of fertilizer has for a number of years been less than the increase in farm costs and prices generally is important. Although prices paid and received by farmers in general have more than doubled since 1935-39, the price of fertilizer has increased about 52 percent. Thus compared with prewar fertilizer is relatively cheap.

The cost of transportation is an important factor in the price of fertilizer. By increasing the plant food content per ton of fertilizer, substantial savings in transportation costs per pound of plant nutrients have been made possible. This is one reason why the price per unit of plant nutrients has not gone up as much as have prices of many other things.

## BUILDING MATERIALS AND FARM SUPPLIES

Prices of building and fencing materials used by farmers were slightly higher in December than a year earlier and about a fifth above the 1947-49 average. Since 1935-39 they have increased about 143 percent, compared with an increase of about 131 percent in prices paid by farmers for all commodities and services used in farm production, including interest, taxes, and wage rates.

Among the major items of farm building materials that were higher in December than a year earlier are cement (up 3.2 percent) and composition roofing (up 3.5 percent). Prices of some items of building and fencing materials were slightly lower. The total cost of materials used in building a typical poultry house was about the same as in 1953 (fig. 3).

Prices of miscellaneous farm supplies are about 2 percent lower on the average than a year ago, but they are about 17 percent higher than in 1947-49. The increase in prices of these items since 1935-39 has been about 97 percent, or slightly less than the average increase in prices of all production items.

## PESTICIDES

Prices of most pesticides have remained unchanged since last September. Of 22 important pesticidal materials, manufacturers' prices of only 3 have changed in the last 5 months. Prices of toxaphene are slightly higher, and those for parathion and 2,4-D are slightly lower.

Current stocks are about 10 percent smaller than a year earlier, largely because excessive stocks of some pesticides have been reduced. Stocks of individual pesticides vary considerably. Stocks of aldrin are only about half as large as a year earlier. Lead arsenate and copper sulfate are about 70 percent and calcium arsenate about 80 percent of a

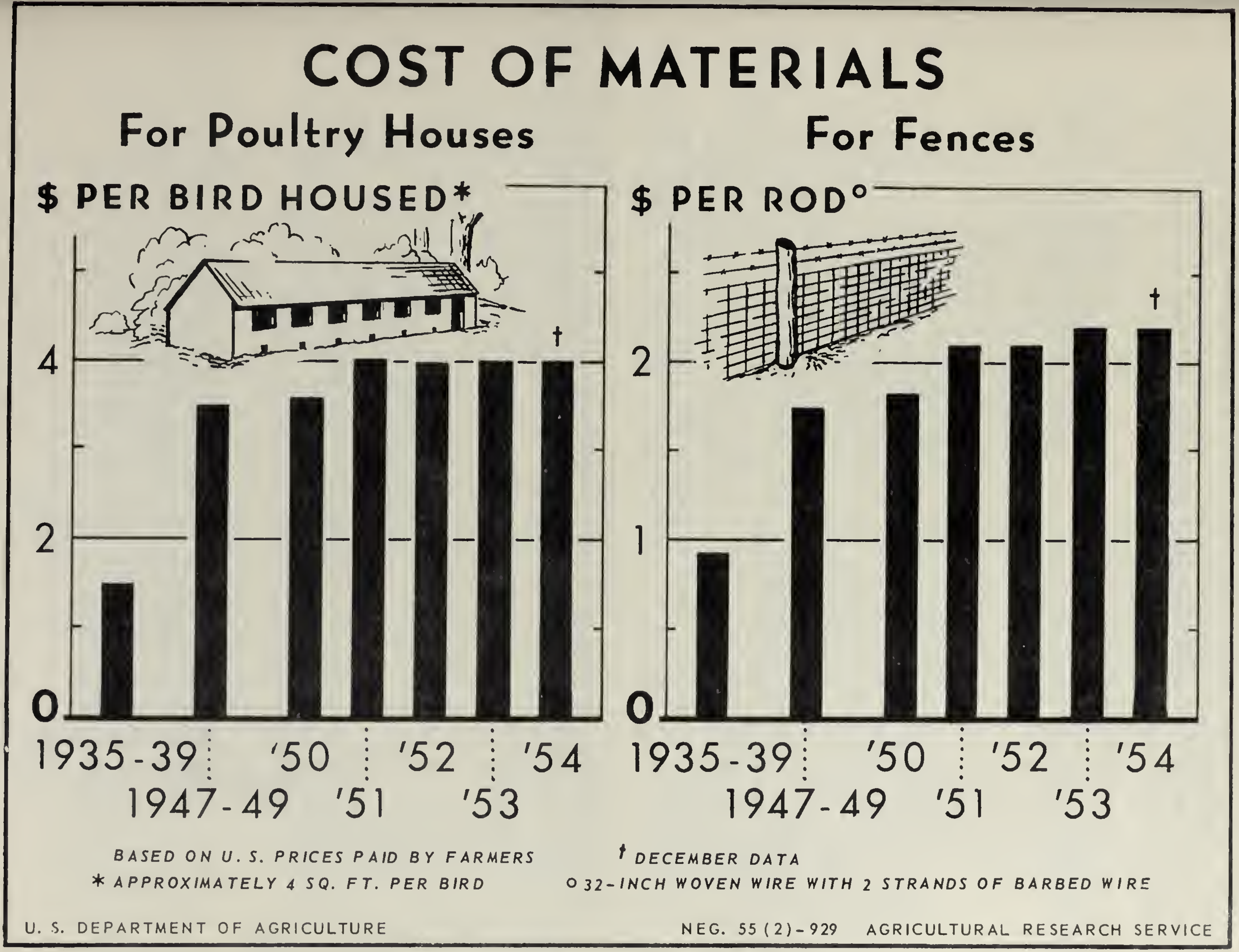
COST OF MATERIALS
For Poultry Houses
$ PER BIRD HOUSED*
4
2
0
†
1935-39
1947-49
'50
'51
'52
'53
'54
For Fences
$ PER ROD°
2
1
0
†
1935-39
1947-49
'50
'51
'52
'53
'54
BASED ON U. S. PRICES PAID BY FARMERS
* APPROXIMATELY 4 SQ. FT. PER BIRD
† DECEMBER DATA
° 32-INCH WOVEN WIRE WITH 2 STRANDS OF BARBED WIRE
U. S. DEPARTMENT OF AGRICULTURE
NEG. 55 (2)-929 AGRICULTURAL RESEARCH SERVICE

Figure 3

year ago. On the other hand, stocks of benzene hexachloride, chlordane, and DDT are each about 20 percent larger than a year earlier, and stocks of some newer materials such as captan and malathion are larger as they have been built up considerably to meet a growing demand.

Capacity of the chemical industry appears to be adequate to supply any foreseeable demand for pesticides in the 1955 season, and no significant changes in prices of pesticides are expected.

## LAND COSTS AND RENTS

Prices of farmland strengthened in the central Corn Belt in the last half of 1954 but in most other States they drifted moderately lower. Nationally, land values last November averaged 2 percent above a year earlier (fig. 4) when they were 148 percent above 1935-39 (fig. 5). But last November they were 4 percent below the all-time peak reached in July 1952. Trends in values in the various regions since that peak level was reached have varied considerably. New all-time peaks occurred in 6 States last November, and in 16 other States values were within 5 percent of their previous highs. Values averaged from 5 to 10 percent lower in most of the South Central States, where drought reduced farm income and the demand for farmland. Land values in most western range States have declined about 15 percent in response to drought and to lower cattle prices.

Sales activity continued at the relatively low level of recent years, except in the Midwest where a slight increase occurred in the last half of 1954. Although demand for farmland was somewhat stronger than a year earlier in this area, the number of farms available for sale continued at a low level, as it was limited mainly to estate settlements and retiring farmers. Lower interest rates and an increase in the amount of credit available to finance farm purchases also contributed to the general strength noted in the land market in the Corn Belt. Several major insurance companies active in this area have reduced their interest rates by one-half of 1 percent. They have also raised their appraisals or upper loan limits on the better grades of farms. This general easing of credit has also occurred in selected areas elsewhere, but it has not become sufficiently widespread to affect significantly the general level of land values.

Farmers paid about $3 billion in cash and in crop and livestock share rents for the land they rented in 1954. This was only 2 percent less than in 1953 but it was 12 percent less than for the record year 1952. Crop-share rents accounted for about three-fourths of all rents paid and, because the rental share remains relatively constant, changes in the value of such rents result mainly from changes in crop prices and yields.

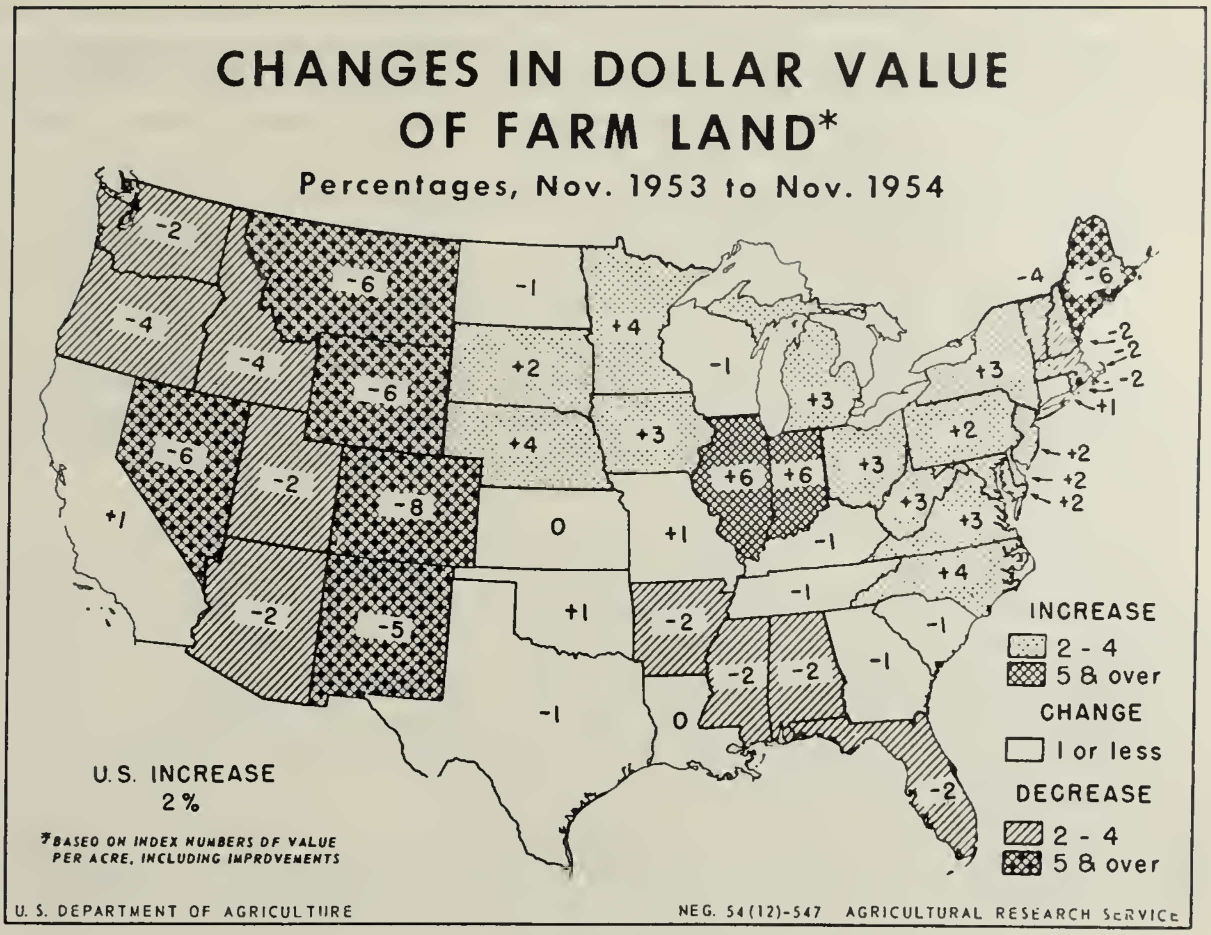
CHANGES IN DOLLAR VALUE OF FARM LAND*
Percentages, Nov. 1953 to Nov. 1954
-2
-6
-1
+4
-4
-4
+2
-6
-1
+3
-4
-6
-2
-2
-2
+1
+3
-6
-2
-8
+4
+3
+6
+6
+3
+2
+2
+2
+2
+1
0
+1
-1
+3
+3
+4
-2
-5
+1
-2
-1
-1
-2
-2
-1
-1
0
-2
INCREASE
2 - 4
5 & over
CHANGE
1 or less
DECREASE
2 - 4
5 & over
U.S. INCREASE 2%
*BASED ON INDEX NUMBERS OF VALUE PER ACRE, INCLUDING IMPROVEMENTS
U. S. DEPARTMENT OF AGRICULTURE
NEG. 54(12)-547 AGRICULTURAL RESEARCH SERVICE

Figure 4

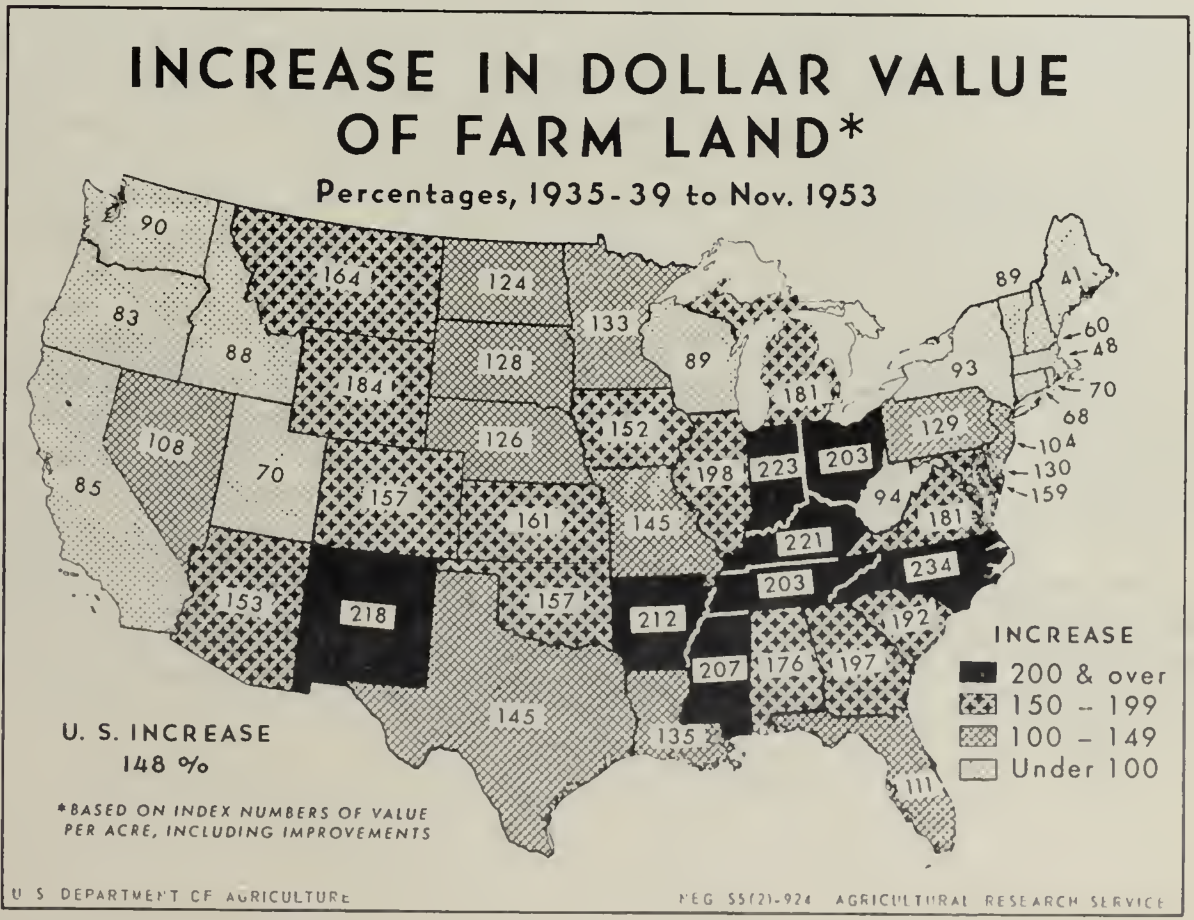
INCREASE IN DOLLAR VALUE OF FARM LAND*
Percentages, 1935-39 to Nov. 1953
90
164
124
133
83
88
184
128
89
181
93
89
41
60
48
70
68
104
130
159
108
70
85
126
152
129
198
223
203
157
161
145
94
181
221
234
153
218
157
212
203
192
207
176
197
145
135
111
INCREASE
200 & over
150 – 199
100 – 149
Under 100
U. S. INCREASE 148 %
*BASED ON INDEX NUMBERS OF VALUE PER ACRE, INCLUDING IMPROVEMENTS
U. S. DEPARTMENT OF AGRICULTURE
NEG. 55(2)-924 AGRICULTURAL RESEARCH SERVICE

Figure 5

Landlords' expenses on rented land amounted to about $1.4 billion in 1954, two-fifths of which were for real estate taxes and building depreciation. Thus, the net income from all rented land was about $1.7 billion, or about 5 percent of the market value of leased land. This rate of return is the lowest since prewar. It is roughly the same as the prevailing rate of interest on new farm mortgages.

## INTEREST, TAXES AND INSURANCE

Total farm-mortgage debt on January 1, 1955, is estimated at about $8.2 billion, approximately 7 percent above a year earlier. It is expected that interest payable on farm-mortgage debt in 1955 will be about $405 million as compared with $380 million in 1954.

Some reduction in mortgage interest rates took place in 1954, but little further change is expected in 1955. The average rate paid on all outstanding farm mortgages in 1955 will be about 4.7 percent. There is some variation in interest rates charged by different lenders. Most new mortgages in 1955 are expected to carry rates of 4 to 5.5 percent. These rates depend on the lender, the geographical area, the term of the loan, and the amount of loan as compared with the value of the farm offered as security. A farmer can sometimes make a considerable saving in mortgage interest by shopping around among the lenders who operate in his area.

The cost of the short-term credit that farmers use for production purposes may rise slightly but the total cost in 1955 is not expected to differ greatly from that of 1954. This cost will be determined largely by the amount of money farmers borrow. Interest rates of some lenders may rise slightly because of firmer money market conditions, but on the whole, the increase will probably be slight. In 1953 and early 1954 the amount of short-term credit used by farmers was decreasing, but since mid-1954 farmers have stepped up their rate of borrowing. The current rate of borrowing, which is somewhat above that of a year ago, is expected to continue in 1955.

Preliminary reports indicate that State and local property taxes paid by farmers in 1955 (levied mainly in 1954) will be about 4 percent greater than they were in 1954. Taxes levied on farm real estate are expected to be about 5 percent greater, whereas taxes levied on personal property are expected to be about 3 percent less than they were in 1954.

The continued rise in farm property tax levies reflects the rise in expenditures of State and local governments for goods and services. Purchases by State and local governments in the second and third quarters of 1954, according to Department of Commerce reports, continued their upward trend.

In 1955, farmers probably will pay about 23 percent less in Federal income taxes than they did in 1954. These payments represent liabilities incurred principally on income received in the preceding calendar year.

This decline results from 3 developments in 1954. One is the drop of about 9 percent in farmers' incomes, including nonfarm income, as computed for tax purposes. A decline of this magnitude would cause a drop in tax liabilities of about 12 percent. Also, starting on January 1, 1954, a sizable reduction was made in tax rates. The first bracket rate was lowered by about 10 percent - from 22.2 percent to 20.0 percent. Similar reductions were made in other brackets in the lower income range.

The third development that will contribute to a reduction in farmers' Federal income tax payments in 1955 on 1954 income arose from changes enacted in the Revenue Code of 1954. The new tax law introduced several provisions that will save money for many farmers in their taxes on 1954 incomes. Among these are the privilege of deducting as current expenses certain outlays for soil or water conservation, and the liberalized depreciation schedules applicable to new buildings and machinery.

Expenditures for insurance by farmers probably will be generally higher in 1955 than in 1954. Although most farm property values and replacement costs have remained relatively stable in the last 2 or 3 years, some farmers will increase their property insurance in 1955, more nearly to cover current replacement costs. The amounts of insurance carried have often failed to keep up with rises in property values, so that underinsurance is prevalent. As policies (mainly for 5-year terms) are renewed for increased amounts, the higher averages will require larger premium payments.

Because of the increased coverage, the total cost of Social Security taxes to farmers will increase from about $15 million in 1954 to nearly $200 million in 1955 (chiefly payable in 1956 before April 15). The tax rate on self-employment income from farming is 3 percent on net income up to $4,200 a year, and farmers also pay 2 percent on the wages of their hired workers provided they are paid at least $100 in a calendar year.

By the latter half of 1956 many farm operators who have then attained age 65 will be eligible for retirement benefits. Dependents of most farm operators will then be eligible for survivor benefits in case of untimely death.

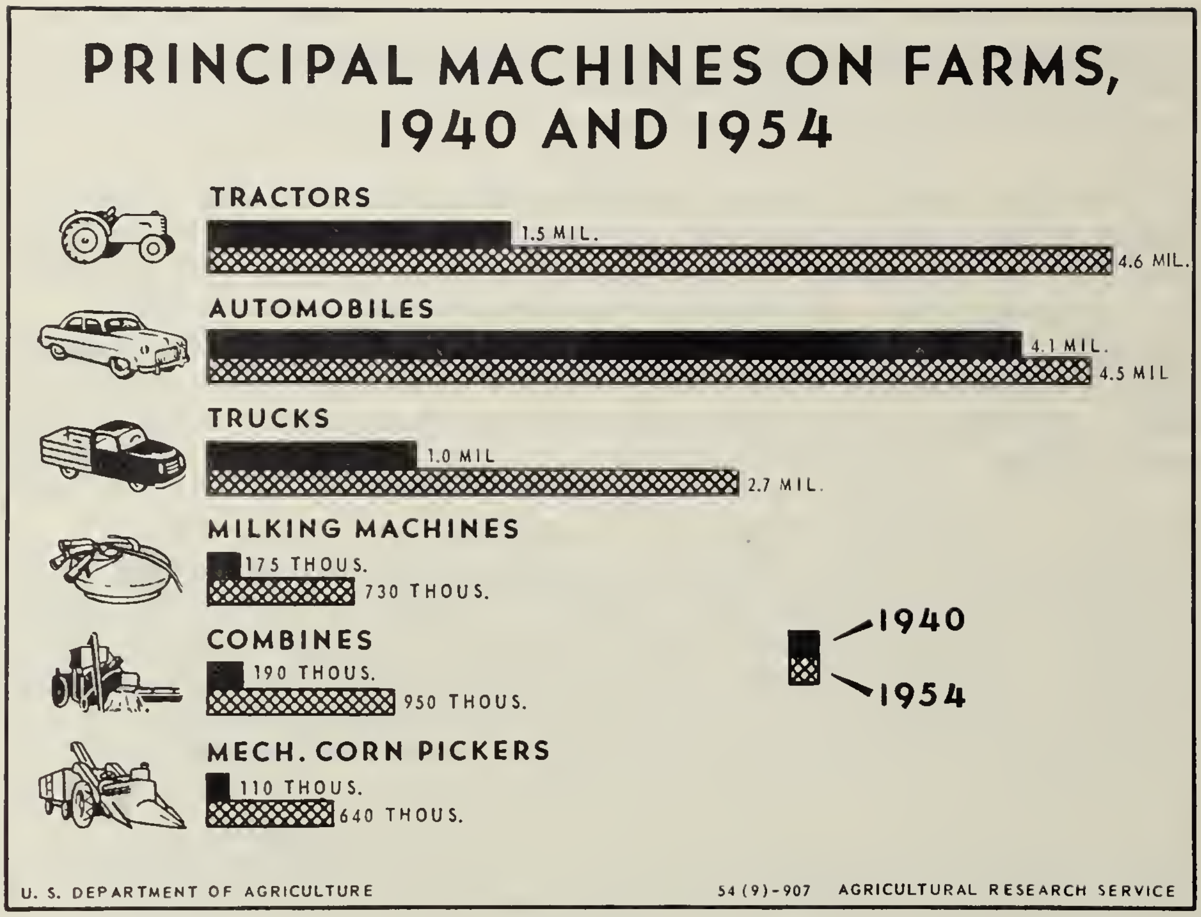

Figure 6

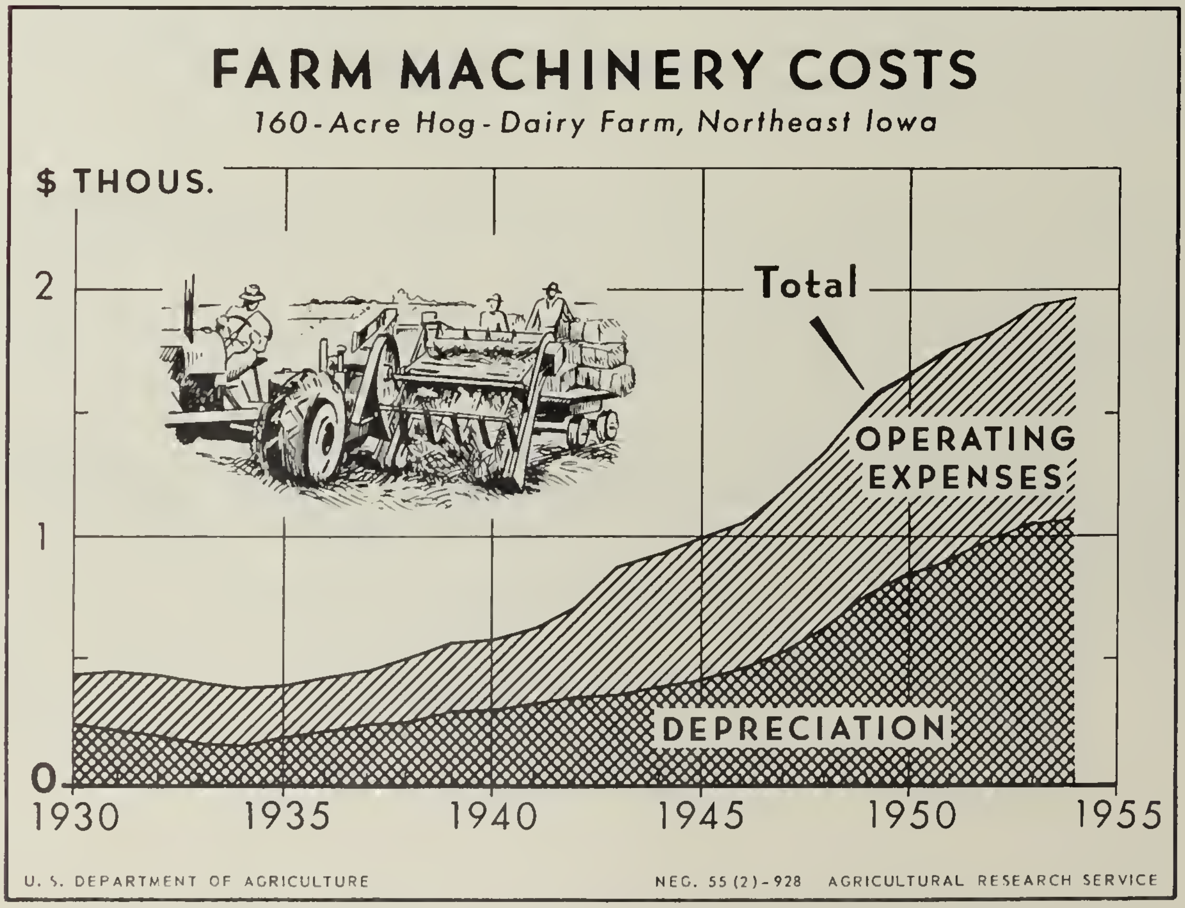

Figure 7

## FARMERS' ADJUSTMENTS TO COST CHANGES

In the last 15 years, farmers have made significant changes in their use of production goods and services. It pays to change the combination of labor, machinery, fertilizer and other items when prices of these goods and services change in relation to one another. Costs can be reduced by using less of the items that become relatively more expensive and more of the items that become relatively less expensive. In addition, changes in the financial position of farmers and in technology also make it profitable for farmers to change the combination of goods and services used. Considerable adjustment to all of these changes has been made in the last 15 years.

### Farmers are Hiring Less Labor

The large increase in farm wage rates and the large decline in the farm labor force have greatly changed farming since 1935-39. However, for the country as a whole, the proportion of the farm labor force that is hired has not changed significantly (table 5). Many farm jobs which formerly were done by hand are now done with machines by a smaller labor force.

### Farmers are Using More Machinery

Changes in the relative costs of labor and machinery have also given impetus to the increase in farm mechanization (fig. 6). Latest estimates indicate that on January 1, 1954 there were 4.6 million tractors of all types on farms, along with 950,000 grain combines, 640,000 mechanical field-type cornpickers, 2,650,000 motortrucks, and 4,450,000 automobiles. About 730,000 farmers had milking machines. Since January 1, 1940, numbers of tractors have increased about 200 percent, grain combines about 400 percent, cornpickers about 480 percent, motortrucks about 150 percent, and farms with milking machines about 320 percent. Numbers of automobiles on farms have shown little change since 1940.

Along with the increases in machine numbers since 1940, other significant developments have arisen. Farms have decreased in number but they have increased in size. With the larger farms and the greatly increased wage rates, more farmers have found it profitable to use larger tractors and machines. In recent years, with sales of wheel tractors declining, shipments of the larger tractors have been relatively well maintained. Also, more farmers in some areas have found it profitable to use diesel and L.P.-gas tractors because of savings in fuel costs. Diesel and L.P.-gas tractors, although their numbers have increased in recent years, still account for only a small percentage of the wheel tractors. Many new models of tractors are being offered to farmers in 1955. They feature increased power, continuous running power take-off, fast hitching, greater variety and range of speeds, power steering, and greater riding comfort.

Table 5.- Farm employment: Annual averages of total family and hired employment, United States, 1935-54

| Year | Total employment | Family workers | Hired workers | |
|---|---|---|---|---|
| | | | Number | Percentage of total |
| | Thousands | Thousands | Thousands | Percent |
| 1935 | 12,733 | 9,855 | 2,878 | 22.6 |
| 1936 | 12,331 | 9,350 | 2,981 | 24.2 |
| 1937 | 11,978 | 9,054 | 2,924 | 24.4 |
| 1938 | 11,622 | 8,815 | 2,807 | 24.2 |
| 1939 | 11,338 | 8,611 | 2,727 | 24.1 |
| 1940 | 10,979 | 8,300 | 2,679 | 24.4 |
| 1941 | 10,669 | 8,017 | 2,652 | 24.9 |
| 1942 | 10,504 | 7,949 | 2,555 | 24.3 |
| 1943 | 10,446 | 8,010 | 2,436 | 23.3 |
| 1944 | 10,219 | 7,988 | 2,231 | 21.8 |
| 1945 | 10,000 | 7,881 | 2,119 | 21.2 |
| 1946 | 10,295 | 8,106 | 2,189 | 21.3 |
| 1947 | 10,382 | 8,115 | 2,267 | 21.8 |
| 1948 | 10,363 | 8,026 | 2,337 | 22.6 |
| 1949 | 9,964 | 7,712 | 2,252 | 22.6 |
| 1950 | 9,342 | 7,252 | 2,090 | 22.4 |
| 1951 | 8,985 | 6,997 | 1,988 | 22.1 |
| 1952 | 8,669 | 6,748 | 1,921 | 22.2 |
| 1953 | 8,580 | 6,645 | 1,935 | 22.6 |
| 1954 | 8,451 | 6,521 | 1,930 | 22.8 |

Data published currently in Farm Labor report (AMS).

Developments in other machines have also been directed toward savings in labor and in other costs. An important number of self-propelled combines are now on farms. Automatic tie balers now account for the great bulk of the baling of hay and straw. In 1940 there were practically no self-propelled combines or automatic tie balers. Many other machines now require less labor to perform a specified amount of work than did the prewar machines. With sufficient use, modern machines effect substantial savings in cost.

Numbers of tractors and other major machines on farms can be expected to continue to increase although at a slower rate than in the last 15 years. In most sections of the country, agriculture has now become highly mechanized and most purchases of new machines and equipment from now on will be for replacement.

Farm machinery depreciation and operating expenses have increased considerably since prewar. On 160-acre hog-dairy farms in northeastern Iowa, for example, the total of these two items has increased from about $500 in the 1930's to nearly $2,000 in 1954 (fig. 7).

## Cotton Mechanization

Production of many crops has become almost completely mechanized but hand methods are still used extensively in production of cotton. As yet, machines and techniques have not been developed to the point at which complete mechanization of cotton production in a large part of the Cotton Belt would be profitable. This is partly because of low farm wage rates and many small farms in the South.

Problems of cotton mechanization are being studied by the United States Department of Agriculture in cooperation with several State colleges. A recent report on the situation in North Carolina contains these significant findings: [1]

1. Under present cost-price relationships, only a relatively small number of farms have sufficient acreages of cotton to justify the purchase and use of a mechanical picker.

2. Use of the picker is restricted to fairly level fields.

3. Mechanical strippers can be used economically on smaller acreages than mechanical pickers, provided gins capable of handling a high percentage of trash are available.

4. Use of strippers is restricted to areas that produce cotton plants less than 40 inches tall.

5. Field and grade losses and additional ginning charges are substantial when mechanical strippers and pickers are used.

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[1] Cotton Mechanization in North Carolina. N. C. Agr. Expt. Sta. Tech. Bull. 104 in cooperation with the Agricultural Research Service, U.S.D.A.

6. Substitution of tractors for animal power is taking place rapidly on the larger cotton farms.

7. Rotary weeders can be used to good advantage on some farms with tractors, although hand hoeing usually is not completely eliminated by their use (table 6).

Table 6.- Labor used and related costs of producing cotton with different combinations of equipment, Southern Piedmont Area, North Carolina, 1951 1/

| Power and equipment used | Per acre: Man hours | Per acre: Total specified costs 2/ |
|---|---|---|
| | Number | Dollars |
| Animal power only | 138.2 | 113 |
| Animal and tractor power | 135.5 | 111 |
| Tractor power only | 117.5 | 101 |
| Tractor power and rotary weeders | 94.4 | 92 |

1/ Based on 1947-49 practices where cotton was harvested by hand.
2/ Labor, fertilizer, and seed.

In the High Plains area of Texas where about half of the cotton crop is harvested by mechanical strippers, the situation is quite different. 2/ Here farms are larger, the land is less rolling, the climate is less humid, and killing frosts usually occur sooner. Thus the cotton is shorter, it ripens within a shorter period, and the problems associated with weed control and defoliation are less troublesome than they are in North Carolina. Usually it is not practicable to harvest cotton mechanically while the leaves are still on the plants, and so long as a large labor force is needed for chopping and hoeing, it is less advantageous to mechanize harvest operations.

More cotton is grown in the High Plains area of Texas than can be hand harvested by the local labor force. Also, there is always the possibility that the number of migratory workers will not be sufficient to make up the deficit. Consequently, many farmers in this area have mechanical strippers. These are usually put into operation about 2 weeks after the first killing frost. The percentage of the crop that is harvested by these strippers depends to a large extent on how much of the cotton already has been harvested by hand before the strippers can be used. After frost kills the plants and it becomes possible to use strippers, the relative costs of machine and hand methods become a more

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2/ Economics of Mechanical Cotton Harvesting in the High Plains Cotton area of Texas. Texas Agr. Expt. Sta. Bull. 735 in cooperation with the Bureau of Agricultural Economics, U.S.D.A.

important factor. Almost all of the cotton that is harvested by hand in this area is snapped; practically none of it is picked. Therefore, the cotton gins in this area are capable of handling stripped cotton, which contains more trash than cotton that has been picked either by hand or by machine.

In California where all cotton is grown under irrigation and where yields are consequently relatively high, about two-thirds of the crop is picked by machines. 3/ Mechanical 1-row pickers cost up to $10,000 new, including the tractor, whereas mechanical strippers of the type used in Texas cost about $1,500 new, excluding the tractor. Despite the high initial cost of mechanical pickers, it is considerably cheaper to pick cotton by machine under California conditions than to pick it by hand. Many of the conditions that are retarding cotton mechanization in North Carolina, such as small farms, rolling terrain, persistent weeds, late frosts, low yields, and a large supply of farm labor are not present in California. At first (1945) machines were used to supplement hand picking. Today many growers have eliminated hand picking entirely.

## Farmers are Buying Larger Equipment

Farmers also buy larger machinery and equipment. This is especially true in areas that were first to become mechanized.

Field operations were largely mechanized in the Corn Belt by the end of World War II, but progress is still going on. Some of the changes that took place in the cash-grain area of east central Illinois in recent years are indicated by surveys made in 1948 and 1953.

In the first place, there has been a decided shift to larger tractors. About 86 percent of the tractors bought by these farmers in 1950-52 were designed to handle as many as three 14-inch plows, whereas only 18 percent of the tractors made before 1940 and still on these farms in 1952 were designed for plows that large. Corresponding figures for the 1940-44 and 1945-49 models are 31 percent and 54 percent respectively.

Most of the commercial farms in this area now have one or more 3-plow tractors. Of the farms in the survey in 1952 with 70 or more total acres, nearly three-fourths had tractors that were rated by the manufacturer as large enough for three 14-inch plows.

The advantage in having more powerful tractors undoubtedly stimulated tractor sales in this area in recent years. About 29 percent of the tractors on these farms in 1952 were less than 3 years old. Moreover, 46 percent of the farms had at least one tractor that was less than 3 years old. Farms of 70 or more acres had an average of 2.0 tractors per farm in 1952 compared with 1.6 in 1947.

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3/ Economics of Mechanical Cotton Harvesting. Calif. Agr. Expt. Sta. Bull. 743, in cooperation with the Agricultural Research Service, U.S.D.A.

In order to take full advantage of the greater power available in the newer and larger tractors, farmers in this area are buying larger plows, disks, planters, and cultivators. From 1947 to 1952 the proportion of the plowing done with 3- to 5-bottom plows increased from 39 to 68 percent. Planting with 4-row planters increased from 39 to 76 percent. Cultivating with 4-row cultivators increased from 6 to 62 percent.

This larger machinery represents a substantial increase in capital investment. It takes about $1,500 more to buy a 3-plow tractor with plow, disk, planter, and cultivator to match than to buy a 2-plow tractor with correspondingly smaller implements.

The larger machinery saves many hours of man labor. Particularly important is the fact that much of this labor is saved in the busier seasons of the year. On a 225-acre cash-grain farm, for example, the plowing, disking, harrowing, planting, and cultivating can be done in about 200 fewer hours with a 3-plow tractor and 4-row equipment than with a 2-plow tractor and 2-row equipment. This cuts the labor for these operations by more than a third.

Not only is the labor requirement substantially reduced with the larger machines but the chances of getting the work done at the proper time are greatly increased.

## Farmers are Operating Larger Units

Many farmers cannot afford to own some of the larger items of farm machinery and equipment which save labor, unless they can buy or rent more land. This fact stimulates an increase in the size of farms.

Farms offered for sale have provided an opportunity each year for only a limited number of farmers to enlarge their farms and thereby to make more efficient use of farm machinery. No doubt, the small acreage of farmland available, particularly in the better land areas, has prevented as rapid an increase in size of farms as might have occurred otherwise.

Despite the limited supply of land for sale and, at times, keen competition from investor buyers, farmers have been active participants in the farm real estate market. They have bought two-thirds or more of all farms sold in most areas, and about 90 percent of such purchases were to be farmed by the buyer, either as a complete unit or in combination with other land. Nationally, 29 percent of a sample of farms sold in 1954 were for farm enlargement. The proportion was substantially higher in areas in which the greatest gains in farming efficiency could be realized by increasing the size of farm. Thus, in the wheat areas, from 40 to 50 percent of all farms and tracts sold were to be combined with other land owned by the buyer. In the eastern Corn Belt about a third of all purchases were for this purpose. A substantial proportion of all transfers in the range areas was bought to enlarge existing ranches. In contrast, purchases for farm enlargement have occurred less frequently in the dairy, general farming, and tobacco areas in which opportunities for increased mechanization of crop production have been fewer.

The strong competition for the limited supply of land available in those areas in which the greatest gains in production efficiency can be achieved by farm enlargement, as in the Corn Belt and wheat areas, is reflected in the relatively high prices paid for such tracts. In many cases, buyers tend to value such land in terms of the additional income possible from their entire farm, if the additional land can be acquired. They may be willing to pay more than the going market price for land similar to their own. As a result, unimproved tracts (without buildings) often sell for as much or more than similar land with improvements. When such purchases are soundly financed, a high price may be justified in terms of the overall gains in efficiency, but where additional debt is added to a farm that is already heavily mortgaged, the financial risks are obvious.

## Farmers are Using More Fertilizer

The slower rise in the price of fertilizer relative to prices of other production items and prices received for farm products, along with advances in technology and greater knowledge as to both its use and crop response, has been largely responsible for the spectacular increase in the use of fertilizer since 1940 (fig. 8). To an individual farmer the increased yield from applying fertilizer has meant lower cost per unit of production. These increased yields, in turn, have been an important source of increased production in the war and postwar years.

Many farmers still use less fertilizer than would be profitable. The optimum rate of fertilizer application varies with the price of fertilizer and the price of a particular product, as demonstrated in the following example. These estimates are based on fertilizer experiments conducted on rather poor soil in the Corn Belt. Therefore, the most profitable rate of application indicated here would be too high for most soils in that area.

Some general estimates of rates for corn at which the return would be $1.50 for the last dollar spent, 4/ under different prices of the crop and costs of fertilizer are presented in table 7. These estimates are intended to be illustrative of the method of analysis but they probably indicate fairly well how the rate of fertilizer application on many Corn Belt soils that are somewhat below average in fertility varies with the price of fertilizer and the price of corn. The estimates are in terms of fertilizer carrying 30 percent plant nutrients; they assume that the plant nutrient ratio would be suited to the situation where used.

The prices of both crop and fertilizer significantly affect the most profitable rate of application under these conditions. For example, with fertilizer at $80 a ton, the quantity to apply would vary. With corn worth 80 cents, 435 pounds would be applied. With corn at $1.60,

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4/ Even though the rate that would likely be most profitable in a normal year is known, farmers must attempt to evaluate risk of unfavorable weather or other factors beyond his control.

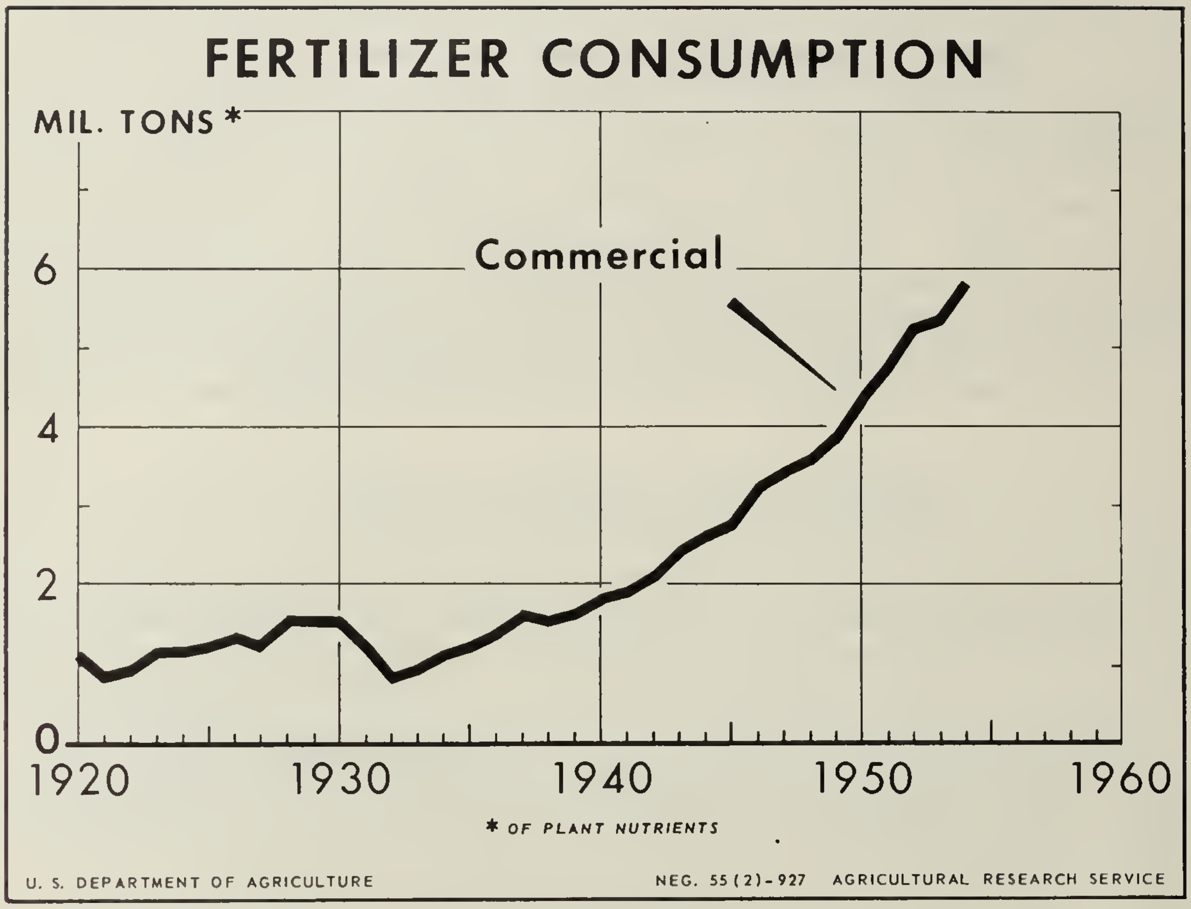

Figure 8

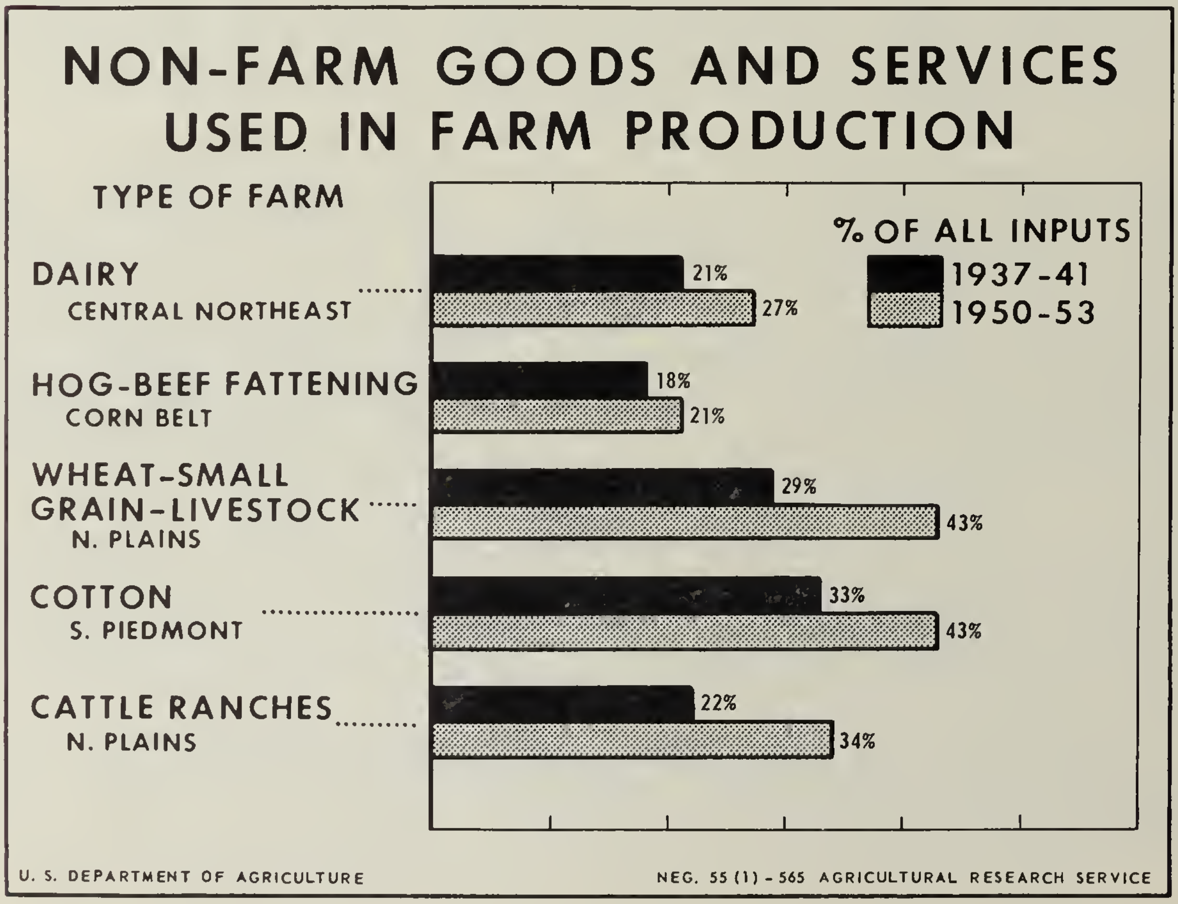

Figure 9

Table 7.- Approximate rates of fertilization at which the last dollar spent for fertilizer on corn would return $1.50, Corn Belt soils of below average fertility 1/

| Cost per ton of fertilizer | Value of corn per bushel 2/ | | | | |
|---|---|---|---|---|---|
| | $ 0.80 | $ 1.00 | $1.20 | $1.40 | $1.60 |
| Dollars | Pounds of fertilizer per acre | | | | |
| 90 | 310 | 525 | 670 | 780 | 875 |
| 80 | 435 | 620 | 760 | 865 | 975 |
| 70 | 550 | 725 | 850 | 950 | 1,040 |
| 60 | 675 | 830 | 955 | 1,050 | 1,140 |
| 50 | 805 | 950 | 1,075 | 1,165 | 1,250 |

1/ Estimates based on use of fertilizer containing the most economic nutrient balance of material containing 30 percent plant nutrients.

2/ Value in the field prior to harvesting.

975 pounds would be more appropriate.

Generally, a $0.20 difference in price of corn per bushel would influence recommended rates more than would a $10 difference in the cost per ton of the type of fertilizer specified. Also, the first increases in price above $0.80 affect the recommended rate more than the last one ($1.40 to $1.60) at any cost per ton of the type of fertilizer specified. This is because higher prices justify higher rates but as higher rates are used, increases in yield diminish with each unit added.

## Farmers are Buying More Nonfarm Goods and Services

Farmers are using more nonfarm goods and services in their farming operations. This is a reflection of previously discussed changes in farming methods. Formerly, farmers raised horses and mules to provide most of the power they used. Many jobs that were formerly done by hand are now done mechanically. Machinery, motor supplies, fertilizer, spraying materials, and electricity are among the goods and services that farmers buy in larger quantities today. In 1937-41 such inputs represented from 18 to 33 percent of total farm costs for the five types of farms illustrated in figure 9; in 1950-53 they represented 21 to 43 percent of the total.

## Farmers are Using More Credit

The use of credit in financing agriculture has been increased. It reflects the greater amount of investment and operating capital required for efficient farm operation under present conditions. The total value of physical farm assets is now $140.3 billion compared with $48.9 billion in 1940. In terms of 1947-49 prices the value of such assets has increased from $100.6 billion in 1940 to $122.7 billion in 1955.

Farm-mortgage debt is usually incurred by farmers for such long-run purposes as buying a farm, making major improvements, and sometimes for stocking and equipping a farm. On January 1, 1940, a total of $6.6 billion of farm-mortgage debt was outstanding. From 1940 through 1945 farmers reduced their mortgage debt substantially, and at the beginning of 1946 the debt stood at only $4.8 billion. Since then farm-mortgage debt has increased each year as farmers have increased their capital investment and as farms have sold at higher prices. At the beginning of 1955, total farm-mortgage debt was about $8.2 billion.

Farmers borrow against real estate mortgages for several reasons. A sample of 1,200 Federal land bank loans closed prior to June 15, 1954 showed that 60 percent of the money borrowed was to refinance existing debts, 13 percent was to buy farm real estate, and 27 percent was for all other purposes, including purchase of livestock and machinery and the making of farm improvements. In the fourth quarter of 1954, thirteen life insurance companies, which committed $115 million in loans during the quarter, reported that 35 percent of the amount was for purchase of real estate, 49 percent was to refinance existing debts, and 16 percent was for all other purposes.

Farmers are also increasing their short-term, non-real-estate borrowings. During World War II years, the short-term debt owed by farmers excluding price-support loans, remained relatively stable, decreasing slightly from $3.0 billion on January 1, 1940, to $2.9 billion on January 1, 1946. By the beginning of 1955, however, this debt totaled about $7.2 billion. An even higher debt of $7.6 billion had been reached on January 1, 1953, following a period of heavy investment in machinery, livestock, and farm improvements. The postwar expansion in credit has occurred mainly in the form of an increase in the average debt per borrower, but the proportion of all farmers who use production credit probably has increased also.

Interest rates on short-term credit declined between 1940 and 1946, but they have since increased. Thus, the rise in the cost of credit in the postwar years has been proportionately greater than the rise in the amount of credit used. The cost of production credit used in 1954 has been estimated at about $500 million.

Because of the rapid turnover of short-term credit, the amount currently borrowed and repaid annually may be as much as $15 billion. In addition to its effect on interest costs, this large amount of credit also imposes three problems of risk: (1) A heavy dependency on credit--if credit were sharply curtailed by lenders and creditors it might seriously restrict production and incomes of individual farmers, (2) a large recurring liability for farmers--if credit is not repaid when due it could expand rapidly to dangerous levels and (3) credit permits a larger volume of business, but it could conceivably result in greater losses if operations are highly unprofitable. A single loss may reduce a farmer's equity or otherwise impair his borrowing capacity and his ability to operate efficiently. However, difficulties of this nature have so far been rare, except in areas suffering from drought. Under normal circumstances, most farmers may be expected satisfactorily to adjust their use of credit to changes in income.

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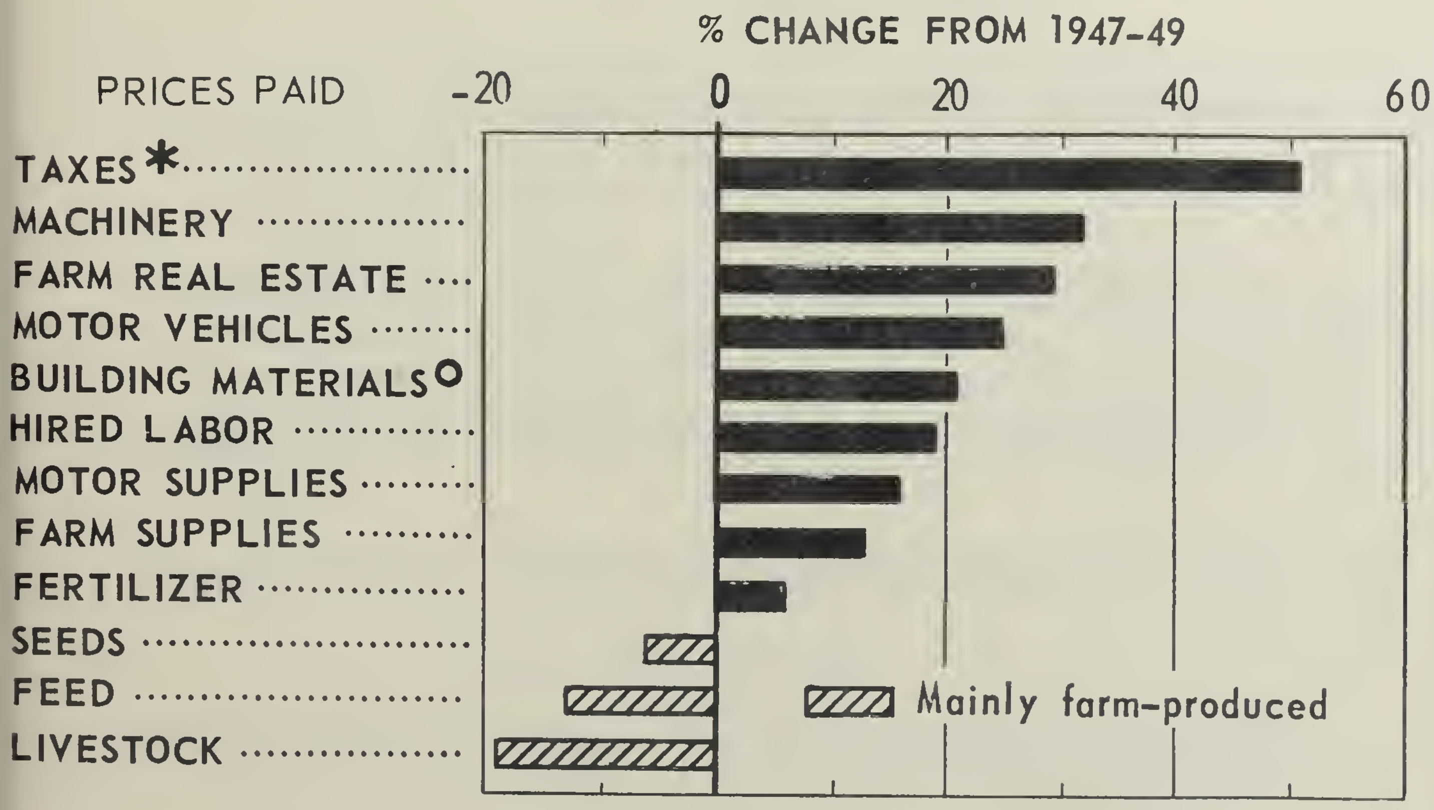
# HE FARM COST SITUATION

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

S 43-23 (FCS- 19) NOVEMBER 1955

FARM COST RATES, FALL, 1955



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Cost rates and prices paid by farmers for goods and services used in roduction are about 11 percent higher this fall than they were in 1947-49. roduction items that are lower in price are mainly those that originate on farms.

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Index numbers (1947-49=100)

| Year or period | Commodities, interest, taxes, and wage rates | Commodities only | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti- lizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910-14 | 39 | 42 | 43 | 29 | --- | --- | 42 | 42 | 34 | 70 | 41 | 23 |
| 1915-19 | 59 | 63 | 68 | 44 | --- | --- | 54 | 70 | 48 | 101 | 62 | 34 |
| 1920-24 | 65 | 61 | 60 | 33 | --- | --- | 65 | 77 | 57 | 101 | 60 | 42 |
| 1925-29 | 65 | 61 | 58 | 44 | 94 | 49 | 64 | 73 | 54 | 92 | 60 | 43 |
| 1930-34 | 50 | 47 | 39 | 25 | 74 | 49 | 61 | 61 | 47 | 75 | 40 | 28 |
| 1935-39 | 49 | 52 | 45 | 36 | 74 | 56 | 64 | 60 | 49 | 71 | 49 | 28 |
| 1940 | 49 | 52 | 43 | 41 | 71 | 56 | 64 | 62 | 49 | 69 | 42 | 30 |
| 1941 | 53 | 55 | 47 | 46 | 74 | 59 | 65 | 66 | 53 | 69 | 40 | 35 |
| 1942 | 60 | 62 | 57 | 54 | 79 | 64 | 69 | 73 | 58 | 76 | 54 | 46 |
| 1943 | 68 | 69 | 68 | 61 | 81 | 67 | 71 | 82 | 60 | 81 | 68 | 61 |
| 1944 | 73 | 73 | 75 | 58 | 82 | 73 | 73 | 86 | 64 | 83 | 77 | 74 |
| 1945 | 77 | 74 | 74 | 63 | 82 | 75 | 74 | 87 | 66 | 84 | 79 | 83 |
| 1946 | 83 | 81 | 87 | 72 | 84 | 77 | 76 | 88 | 72 | 85 | 81 | 90 |
| 1947 | 95 | 95 | 102 | 90 | 92 | 90 | 86 | 95 | 93 | 93 | 93 | 97 |
| 1948 | 104 | 105 | 109 | 111 | 103 | 100 | 101 | 100 | 104 | 102 | 109 | 103 |
| 1949 | 101 | 100 | 89 | 99 | 105 | 110 | 113 | 105 | 103 | 105 | 98 | 100 |
| 1950 | 104 | 104 | 91 | 116 | 106 | 110 | 115 | 105 | 105 | 101 | 94 | 99 |
| 1951 | 115 | 115 | 102 | 141 | 111 | 118 | 124 | 112 | 117 | 106 | 96 | 109 |
| 1952 | 117 | 116 | 109 | 118 | 112 | 123 | 129 | 119 | 118 | 109 | 109 | 117 |
| 1953 | 112 | 106 | 98 | 83 | 114 | 122 | 130 | 120 | 118 | 110 | 100 | 119 |
| 1954 | 112 | 106 | 98 | 85 | 116 | 123 | 131 | 117 | 119 | 108 | 93 | 119 |
| Aug. | 111 | 105 | 98 | 80 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 111 | 106 | 98 | 82 | 115 | 123 | 131 | 115 | 119 | 108 | 93 | --- |
| Oct. | 111 | 105 | 96 | 83 | --- | --- | --- | --- | --- | --- | --- | 117 |
| Nov. | 111 | 106 | 96 | 85 | --- | --- | --- | --- | --- | --- | --- | --- |
| Dec. | 111 | 105 | 97 | 82 | 116 | 122 | 131 | 117 | 119 | --- | --- | --- |
| 1955 | | | | | | | | | | | | |
| Jan. | 114 | 107 | 97 | 88 | --- | 124 | --- | --- | --- | --- | --- | 121 |
| Feb. | 115 | 108 | 97 | 89 | --- | --- | --- | --- | --- | --- | 105 | --- |
| Mar. | 115 | 108 | 96 | 92 | 116 | 125 | 131 | 115 | 120 | --- | 104 | --- |
| Apr. | 114 | 107 | 95 | 91 | --- | --- | --- | 115 | --- | 107 | 104 | 120 |
| May | 113 | 106 | 94 | 84 | --- | --- | --- | --- | --- | --- | 104 | --- |
| June | 113 | 105 | 93 | 85 | 116 | 125 | 132 | 113 | 121 | --- | --- | --- |
| July | 112 | 105 | 91 | 81 | --- | 124 | --- | --- | --- | --- | --- | 119 |
| Aug. | 111 | 104 | 89 | 80 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 111 | 104 | 87 | 81 | 116 | 126 | 134 | 113 | 123 | 106 | 94 | --- |
| Oct. | 111 | 104 | 87 | 82 | --- | --- | --- | --- | --- | --- | --- | 120 |

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# THE FARM COST SITUATION

Approved by the Outlook and Situation Board, November 17, 1955

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## GENERAL SITUATION

The general level of farm costs has changed very little in the last year. The index of prices paid by farmers for goods and services used in production, including interest, taxes, and wage rates was the same in mid-October as it was a year earlier and little overall change is expected in 1956.

Significant divergent movements of individual cost rates have taken place in recent years. In general, farm cost items that are mainly farm-produced--such as feed, seed, and livestock--have gone down in price, whereas wage rates, taxes, and prices paid for many industrial items have gone up. These divergent trends of farm cost rates continued from 1954 to 1955.

Farm cost rates expected in 1956 relative to 1955 are as follows:

Prices of feed and seeds are expected to be somewhat lower on the average.

Prices of fertilizer, farm supplies, and livestock for feeding and replacement are expected to remain fairly stable.

Farm wage rates, interest rates, and prices of building and fencing materials, farm machinery, motor vehicles, and motor supplies are expected to average slightly higher.

Farm property taxes per acre are expected to be about 5 percent higher.

## Cost-Price Relationship

Farm cost rates relative to prices received have returned to about the average level for the 21 years between two world wars, 1919 through 1939, and the level that existed in the late thirties. The present relationship is considerably less favorable than the average for the last 15 years. The ratio of prices paid by farmers for production items, interest, taxes, and wage rates to prices received (annual basis) was more favorable to farmers in 1947 than in any year since 1918. Since 1947, however, prices paid have tended to rise while prices received have declined after reaching a peak in 1951.

With both farm commodity prices and cost rates expected to average near current levels next year, the outlook is for the farm cost-price relationship also to average close to the current level in 1956. However, important changes may occur by type of farm because of differences in composition of costs and commodities produced.

## Production Expenditures

Farmers' expenditures for all goods and services used in production have been fairly stable since 1953. They are currently about 15 percent above the average for 1947-49 and about 4 times as high as they were in 1935-39. They are expected to remain high in 1956 because cost rates are expected to remain high and because the trend toward more specialized and more commercialized farms is expected to continue. Many farmers are still in the process of modernizing their buildings and operations to make farm work easier and to reduce their unit costs of production.

## Costs in Longer Term Perspective

Although overall cost rates relative to prices received are about the same as in the late thirties, this is not true for many individual items. Farm wage rates, for example, have quadrupled since 1935-39, whereas prices of some production items like fertilizer and gasoline have increased less than half as much (fig. 1 left). Relative to the composite index of all farm cost rates and prices paid, wage rates have increased while prices of some important production items have declined (fig. 1 right). Prices of farm-produced commodities rose sharply in the war and postwar periods but are now below where they were in 1935-39 in relation to all cost rates.

The tendency for farm wage rates to increase in relation to other cost rates was pronounced during World War II. Since 1947-49 individual cost rates have not changed as rapidly in relation to one another as during the World War II period. Wage rates declined relative to the composite index from 1945 to 1950 but increased from 1951 to 1953.

Significant changes in farming methods have accompanied the varied movement of farm cost rates. Expenditures for hired labor have not kept pace with increases in farm wage rates while expenditures for feed, seed,

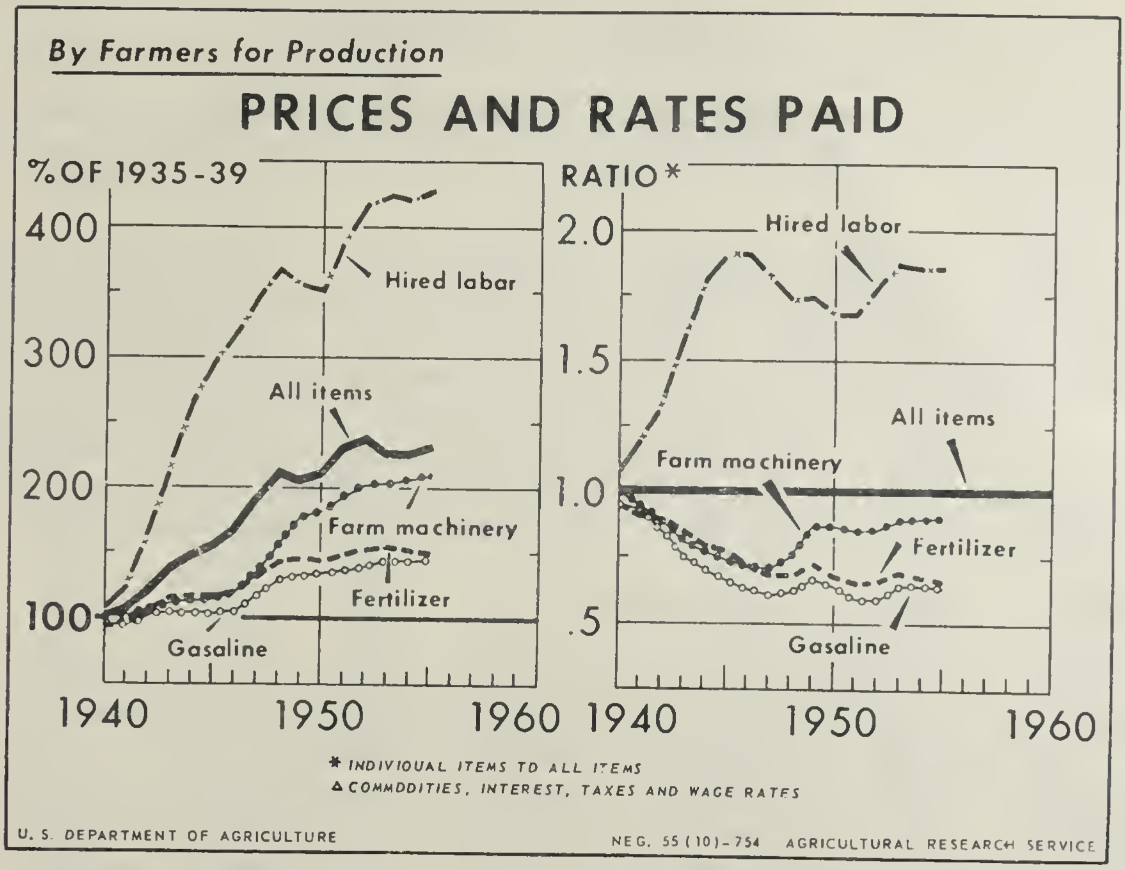

Figure 1

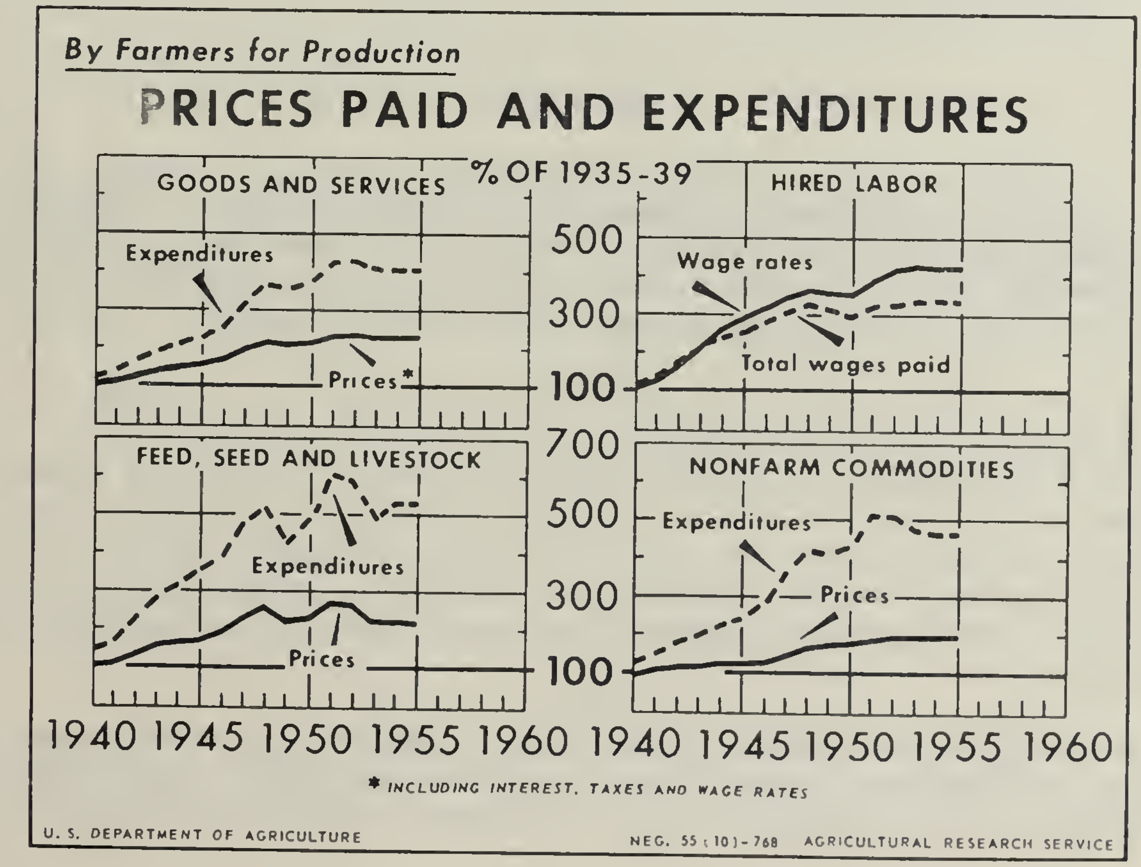

Figure 2

and livestock and for nonfarm production goods have increased faster than their respective cost rates (fig. 2). Both changes in cost rates and technological developments have favored the substitution of nonfarm goods for hired labor. Specialization in farming has increased and this accounts for part of the increase in expenditures for feed, seed, and livestock.

But these changes have not been universal. Some farmers have not been able to adjust their farming practices to fit the changed relationship among farm cost rates. But others have been able to reduce their unit costs of production enough to offset the unfavorable changes in prices. They have been able to do this mainly by increasing output per man-hour. The use of more labor-saving machinery and more commercial fertilizer, and the enlargement of farms have raised the average level of efficiency of farm production considerably in recent years.

## Variations in Costs by Type of Farm

While the overall pattern of costs reflects the average situation throughout the United States, important differences exist among types of farms. From 1947-49 to 1954, for example, increases in cost rates on major types of farms ranged from 5 percent on irrigated cotton farms in the High Plains area of Texas to 22 percent on cash-grain farms in the Corn Belt. Among 21 types of farms studied, increases in cost per unit of production ranged from 1 to 40 percent. Local weather conditions were partly responsible for these varied changes in production costs.

Changes in cost rates from 1954 to 1955 on 4 selected types of farms were small. The prices paid for cost items on these farms ranged from 0 to 3 percent higher.

## FARM LABOR

Farm wage rates have changed relatively little in the last 3 years. Actually, they eased downward a little from 1953 to 1954 but went up slightly from 1954 to 1955. They are now about 20 percent above 1947-49 levels and 300 percent above what they were in 1940 (table 1). A slight increase in farm wage rates is expected in 1956.

Prior to 1950 gross farm income per man-hour and farm wage rates tended to move in the same direction and at about the same rate. Since 1952 gross farm income has receded while farm wage rates have risen. Gross farm income per man-hour in 1955 is expected to be down by more than 3 percent from a year ago chiefly because of lower prices for farm products. Farm wage rates, however, are slightly higher chiefly because of the ease of obtaining nonagricultural employment in which higher wage rates prevail.

As compared with relationships that existed before World War II, farm wages are now much higher than cost rates of other inputs in farming. Farmers have responded to the relatively high labor cost by

Table 1.- Labor used on farms, labor productivity, wage rates and related data, United States, 1940-55 1/

Index numbers (1947-49=100)

| Year | Farm employment | | | Man-hours of farm work 3/ | Farm output 4/ | Farm output per man-hour | Gross farm income per man-hour | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
| | Total 2/ | Family 2/ | Hired | | | | | |
| 1940 | 107 | 104 | 117 | 120 | 83 | 69 | 28 | 30 |
| 1941 | 104 | 101 | 116 | 117 | 86 | 74 | 35 | 35 |
| 1942 | 103 | 100 | 112 | 122 | 96 | 79 | 46 | 46 |
| 1943 | 102 | 101 | 107 | 121 | 94 | 78 | 56 | 61 |
| 1944 | 100 | 100 | 98 | 120 | 97 | 81 | 60 | 74 |
| 1945 | 98 | 99 | 93 | 112 | 96 | 86 | 68 | 83 |
| 1946 | 101 | 102 | 96 | 108 | 98 | 91 | 81 | 90 |
| 1947 | 102 | 102 | 99 | 103 | 95 | 92 | 99 | 97 |
| 1948 | 101 | 101 | 102 | 100 | 104 | 104 | 103 | 103 |
| 1949 | 97 | 97 | 99 | 97 | 101 | 104 | 98 | 100 |
| 1950 | 91 | 91 | 91 | 89 | 100 | 112 | 108 | 99 |
| 1951 | 88 | 88 | 87 | 91 | 103 | 113 | 122 | 109 |
| 1952 | 85 | 85 | 84 | 89 | 107 | 120 | 124 | 117 |
| 1953 | 84 | 84 | 85 | 88 | 108 | 123 | 120 | 119 |
| 1954 | 83 | 82 | 84 | 86 | 108 | 126 | 119 | 119 |
| 1955 6/ | 80 | 79 | 83 | 86 | 112 | 130 | 115 | 120 |

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1/ Data on farm employment, wage rates, and farm income are from the Agricultural Marketing Service, United States Department of Agriculture.

2/ Includes farm operators and members of their families.

3/ Total man-hours of farmwork in terms of the time required by average adult male workers.

4/ Net calendar-year production for eventual human use.

5/ Simple average of seasonally adjusted quarterly indexes.

6/ Preliminary. Estimates of farm output and man-hours for 1955 based on October 1955 "Crop Production" report and other releases of the Agricultural Estimates Division, Agricultural Marketing Service.

reducing labor and substituting machinery and other inputs. This type of substitution has taken place on all types of farms. It has been more pronounced, however, on crop than on livestock farms chiefly because many livestock enterprises have proved more difficult to mechanize (fig. 3). It has also been more rapid on corn and wheat farms than on cotton farms. Substitution of other farm inputs for labor will probably continue to be made.

The number of workers on farms this year is between 3 and 4 percent less than a year ago. Numbers of hired workers are down about 1 percent. Although there have been local shortages for short periods, the number of farmworkers generally has been adequate. The annual decline in number of family workers has averaged about 2-1/2 percent per year in recent years. This reflects the trends toward larger farms and greater mechanization. Numbers of hired workers have declined somewhat more slowly during the last 3 or 4 years.

In 1954 more than 320,000 foreign workers from Mexico, British West Indies, and Canada were brought in on a contract basis to augment the domestic supply of seasonal farmworkers. They were used in areas certified as having an insufficient supply of labor from domestic sources. Although the number brought in appears to be large, not all of them were at work at any given time. In 1954, the greatest number of foreign workers were at work in October when about 200,000 were employed. At that time they constituted about 8 percent of the total number of hired workers on farms.

Greater numbers of Mexican nationals are being contracted this year but some of the additional workers are replacing those that entered illegally in previous years. Stricter control to prevent illegal entry is being maintained. Foreign workers will continue to be available if needed as the law authorizing the recruitment of Mexican nationals for work on American farms under specified conditions has been extended by the Congress to June 30, 1959.

The supply of experienced year-round workers--dairy hands, for example--continued tight this year and a similar situation is expected next year. The short supply of such workers is indicated by the fact that wage rates by the month and by the week have increased more in the last few years than have daily and hourly rates. Year-round workers are usually paid on a monthly or weekly basis, whereas seasonal workers are more likely to be paid on a daily, hourly, or piece-rate basis. Effective recruitment and placement programs will continue to be needed for regular workers as well as for seasonal workers. Improvement in employment conditions on farms, such as better housing, also will aid in getting and keeping farm laborers.

## FARM POWER AND MACHINERY

Until recently wholesale prices of farm machinery and equipment had shown little change since about January 1951. In recent months,

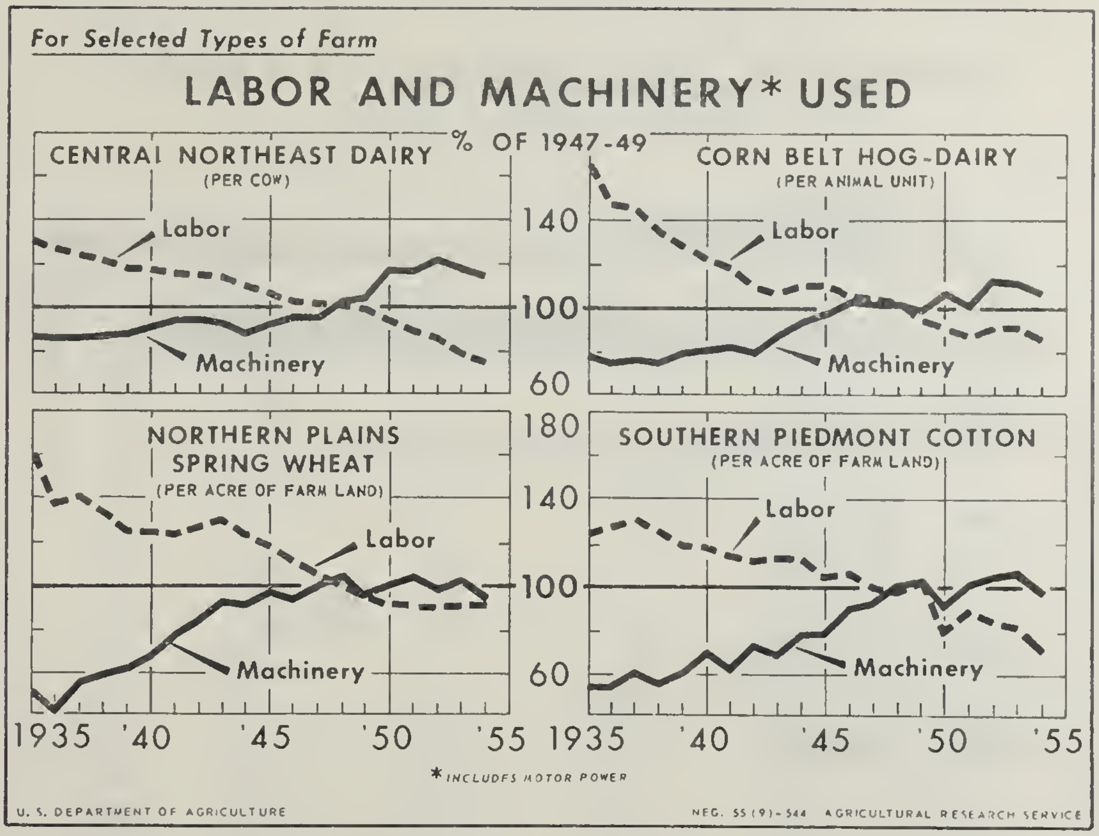

Figure 3

however, several of the major companies have increased prices to dealers from 5 to 7 percent.

Dealers' list prices changed little from early 1952 until this fall. But in recent years many dealers have sold machines and equipment below regular list prices by allowing more than the market value for "trade-ins" or by giving discounts. These practices have been followed to some extent in most areas of the country, but they were most pronounced in drought-stricken areas. The price policy followed by dealers in recent years can be expected to continue in 1956.

Production of farm machinery and equipment was at a record high level in 1951. Output then declined with each successive year and in 1954 it was about one-third below the 1951 output. Production of machines and equipment in the first half of 1955 was about 20 percent above the output of the same period of 1954. Many new model tractors and machines were available to farmers in the current year and this factor, together with generally improved conditions in drought-stricken areas, accounts largely for the increase in shipments of machines and equipment.

Farmers' purchases of machines and equipment have been of relatively large volume for more than 15 years, and there have been continued annual increases in numbers of tractors and most principal machines on farms.

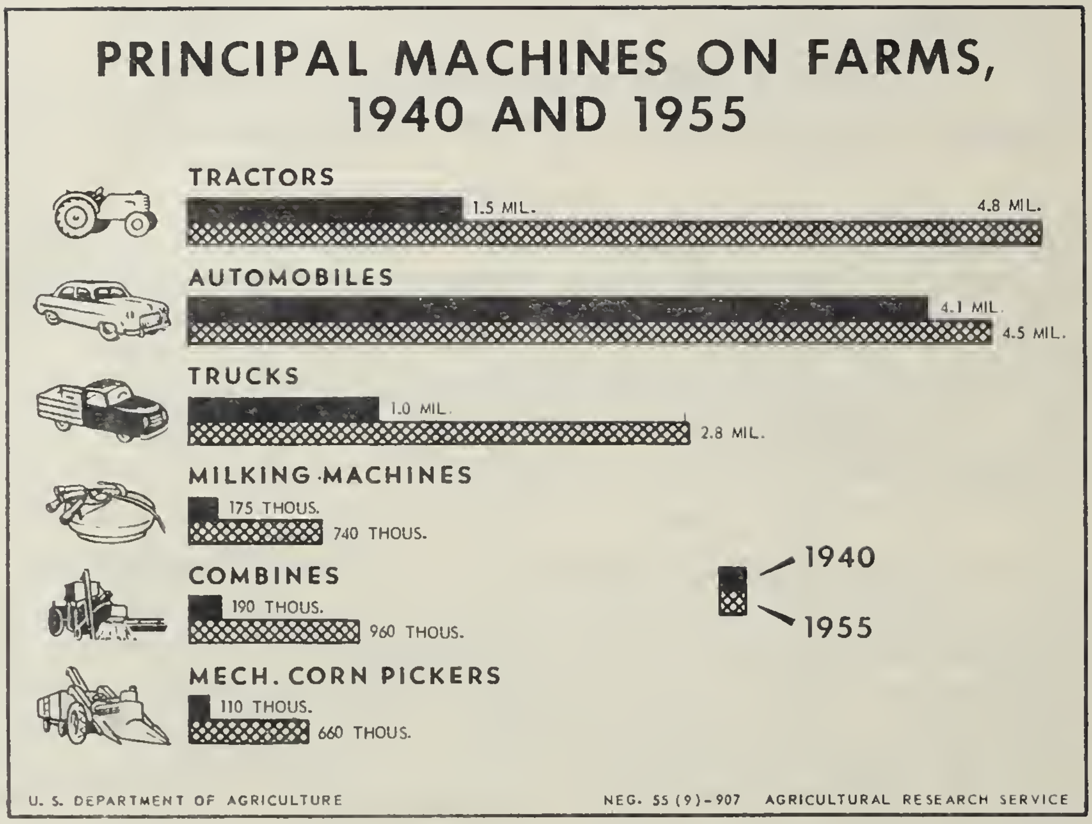

Figure 4

Numbers of wheel tractors (excluding the garden type) and motortrucks on farms are now about three times what they were in 1940 (table 2). Numbers of grain combines and cornpickers have multiplied 5 or 6 times since 1940 (fig. 4).

Although machinery purchases in the past were made primarily for the purpose of replacing manpower or animal power, a proportionately larger part of purchases in the future will be for the purpose of replacing machines with machines. These replacement machines in many cases are larger and more efficient. In effect, this means that the rate of increase in numbers of farm tractors and older types of power-driven machines on farms will slow down, even though purchases will need to remain fairly substantial in the aggregate to maintain our present state of mechanical efficiency. Additional mechanization is to be expected primarily as a result of technological advances, which in the last few years have provided such items as pick-up balers, forage harvesters, and cotton pickers.

Increases in use of mechanized power and equipment have occurred in all areas of the country, but in the Southeastern States and the Appalachian and Mississippi Delta States, the relative increase in tractors and tractor equipment has been much greater since 1940 than the average for the country. Prior to 1940, mechanization in these

Table 2.- Numbers of specified machines and horses and mules on farms, January 1 and prices paid by farmers for tractors, gasoline and tires, 1940-55

Index numbers (1947-49=100)

| Year | Numbers on farms 1/ | | | | | Prices 2/ | | |
|---|---|---|---|---|---|---|---|---|
| | Farm tractors 3/ | Motor-trucks | Grain combines | Corn pickers | Horses and mules 4/ | Tractors 5/ | Gasoline | Tires 6/ |
| 1940 | 54 | 55 | 35 | 36 | 156 | 61 | 74 | 73 |
| 1941 | 59 | 58 | 42 | 40 | 152 | 64 | 78 | 75 |
| 1942 | 66 | 61 | 51 | 43 | 147 | 65 | 80 | 93 |
| 1943 | 74 | 68 | 59 | 46 | 142 | 63 | 81 | 103 |
| 1944 | 78 | 73 | 64 | 48 | 136 | 71 | 81 | 108 |
| 1945 | 83 | 79 | 69 | 56 | 128 | 72 | 80 | 104 |
| 1946 | 87 | 82 | 78 | 67 | 119 | 80 | 83 | 105 |
| 1947 | 92 | 90 | 86 | 78 | 109 | 90 | 92 | 101 |
| 1948 | 99 | 101 | 99 | 99 | 100 | 100 | 103 | 101 |
| 1949 | 109 | 109 | 115 | 123 | 91 | 110 | 105 | 98 |
| 1950 | 119 | 117 | 132 | 151 | 84 | 111 | 106 | 110 |
| 1951 | 129 | 122 | 150 | 173 | 76 | 120 | 107 | 131 |
| 1952 | 136 | 128 | 164 | 195 | 67 | 119 | 109 | 125 |
| 1953 | 142 | 135 | 170 | 204 | 60 | 116 | 112 | 123 |
| 1954 | 147 | 140 | 176 | 212 | 54 | 117 | 113 | 123 |
| 1955 | 7/151 | 7/146 | 7/178 | 7/219 | 49 | 8/119 | 8/114 | 8/120 |

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1/ The 1947-49 average for tractors (excluding garden tractors) was 2,852,000; for motortrucks, 1,888,000; for grain combines, 540,000; for cornpickers, 302,000; and for horses and mules all ages, 9,302,000.

2/ Based on data published currently in Agricultural Prices (AMS). The 1947-49 average for tractors was $1,670; for gasoline (per gallon), $0.242; and for tires $15.80.

3/ Excluding garden tractors.

4/ Based on data published in Livestock and Poultry on Farms and Ranches, January 1 (AMS).

5/ Based on dealers' list prices of 20-29 belt h.p. wheel tractors equipped with rubber tires.

6/ Based on prices reported for size 6:00 x 16.

7/ Preliminary.

8/ Average prices paid in March, June, and September.

Southern areas had made relatively little headway, and animal power is still used to a greater extent there than elsewhere.

With the pronounced upward trend in power machinery and equipment, the number of horses and mules on farms has declined continuously since 1918. There are less than 5 million head of these animals on farms now compared with about 14 million in 1940 and 27 million in 1918. Workstock is no longer an important source of farm power.

Along with the increase in numbers of machines on farms there has been a large increase in the consumption of motor fuels. Farmers now use about 7 billion gallons of motor fuel annually. This is about twice as much as they used in 1940. About 90 percent of the motor fuel is gasoline. The price of gasoline in 1955 was about the same as in 1954 and no important change appears to be in prospect for 1956.

## FEED

The index of prices paid by farmers for feed was about 9 percent lower in mid-October than a year earlier. Prices of the principal high-protein feeds were down 11 to 14 percent while prices of formula feeds were down 5 to 6 percent (table 3). Prices paid for hay were off about 6 percent.

The decline in feed prices is also reflected in prices received by farmers for feed grains and hay. The composite index dropped from 89 (1947-49=100) in October 1954 to 73 in October 1955. During that period prices received by farmers for corn dropped 21 percent. Oats went down 19 percent; barley, 16 percent; and sorghum grain, 24 percent.

Feed prices are lower and are expected to average somewhat lower in the 1955-56 season (October-September) than in the 1954-55 season. Total supplies of feed concentrates for 1955-56 are about 9 percent larger than last year (table 4). About half the increase in the supply of feed grains is due to the larger carryover and the other half to larger production. The supply of oilseed meals is expected to be about 7 percent higher mainly because of larger crops of soybeans and cotton. The total supply of other byproduct feeds is expected to be about the same as in 1954-55. The supply of feed grains in the Southern States is much larger than in any of the last 4 years when droughts cut down production.

The number of grain-consuming animal units to be fed in the year beginning October 1, 1955, is expected to be 2 or 3 percent higher than a year earlier and the largest for any peacetime year. Hogs account for most of the expected increase in livestock to be fed. However, the supply of all concentrates per animal unit will be up 6 or 7 percent and the largest on record. The supply of hay per roughage-consuming animal unit is about equal to the average for the last 5 years and 5 percent above 1954-55.

### Table 3.- Average prices of feeds in the United States, October 15, 1955, with comparisons

| Item and unit | Oct. 15, 1953 | Oct. 15, 1954 | Mar. 15, 1955 | Oct. 15, 1955 |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars |
| Prices received by farmers: | | | | |
| Corn, per bu. | 1.34 | 1.45 | 1.36 | 1.14 |
| Oats, per bu. | .73 | .73 | .74 | .59 |
| Barley, per bu. | 1.12 | 1.08 | 1.08 | .91 |
| Sorghum grain, per 100 lbs. | 2.20 | 2.14 | 2.23 | 1.63 |
| Hay, baled, per ton | 21.20 | 22.30 | 23.00 | 20.50 |
| Prices paid by farmers: | | | | |
| Mixed dairy feed, 16 pct. protein, per 100 lbs. | 3.84 | 3.77 | 3.86 | 3.58 |
| Laying mash, per 100 lbs. | 4.73 | 4.77 | 4.75 | 4.47 |
| Broiler mash, per 100 lbs. | 5.14 | 5.19 | 5.15 | 4.88 |
| Cottonseed meal, per 100 lbs. | 3.70 | 4.40 | 4.36 | 3.81 |
| Soybean meal, per 100 lbs. | 4.46 | 4.81 | 4.62 | 4.32 |
| Linseed meal, per 100 lbs. | 4.58 | 4.58 | 4.75 | 4.47 |
| Meat scrap, per 100 lbs. | 5.36 | 5.80 | 5.28 | 4.98 |
| Bran, per 100 lbs. | 3.05 | 2.98 | 3.11 | 2.87 |
| Middlings, per 100 lbs. | 3.18 | 3.15 | 3.23 | 3.05 |
| Alfalfa hay, baled, per ton | 34.30 | 34.80 | 35.70 | 32.60 |
| Average value of concentrate ration fed to poultry and milk cows: 1/ | | | | |
| Fed to poultry, per 100 lbs. | 3.72 | 3.80 | 3.76 | 3.44 |
| Fed to milk cows, in milk-selling areas, per 100 lbs. | 3.29 | 3.27 | 3.30 | 3.04 |
| Fed to milk cows in cream-selling areas, per 100 lbs. | 2.88 | 2.88 | 2.90 | 2.65 |
| | Index numbers (1947-49=100) | | | |
| Prices received by farmers for feed grains and hay | 84 | 89 | 86 | 73 |
| Prices paid by farmers for feed | 94 | 96 | 96 | 87 |

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1/ Value of the corn, oats, oilmeal, millfeed, commercial mixed feed, etc., making up 100 pounds of "grain" ration.

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Table 4.- Supply and utilization of feed concentrates, and livestock fed, United States, 1937-55 1/

| Year beginning October | Supply | | | | Utilization | | Stocks of feed grains end of year 3/ | Grain-consuming animal units fed | Per grain consuming animal unit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stocks of feed grains beginning of year | Production of feed grains | Other feed concentrates 2/ | Total supply | For seed, human food, industry, and export | Concentrates fed to livestock | | | Production of feed grains | Supply of concentrates | Concentrates fed |
| | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million units | Tons | Tons | Tons |
| Av. 1937-41 | 16.9 | 99.3 | 19.9 | 136.1 | 12.1 | 104.9 | 19.9 | 153.1 | 0.65 | 0.89 | 0.69 |
| Av. 1942-46 | 14.7 | 117.3 | 29.4 | 161.4 | 14.8 | 133.0 | 13.5 | 177.5 | .66 | .91 | .75 |
| 1947 | 13.8 | 94.1 | 24.7 | 132.6 | 13.6 | 110.4 | 7.8 | 154.0 | .61 | .86 | .72 |
| 1948 | 7.8 | 135.4 | 23.5 | 166.7 | 17.6 | 120.1 | 30.4 | 160.1 | .85 | 1.04 | .75 |
| 1949 | 30.4 | 120.6 | 25.2 | 176.2 | 17.2 | 127.3 | 30.6 | 166.1 | .73 | 1.06 | .77 |
| 1950 | 30.6 | 122.0 | 26.0 | 178.6 | 20.4 | 129.8 | 28.7 | 172.3 | .71 | 1.04 | .75 |
| 1951 | 28.7 | 112.9 | 27.0 | 168.6 | 17.2 | 131.6 | 20.2 | 174.2 | .65 | .97 | .76 |
| 1952 | 20.2 | 119.7 | 28.1 | 168.0 | 17.0 | 122.8 | 27.0 | 170.4 | .70 | .99 | .72 |
| 1953 | 27.0 | 117.6 | 28.0 | 172.6 | 16.2 | 125.7 | 31.8 | 168.1 | .70 | 1.03 | .75 |
| 1954 | 31.8 | 121.6 | 26.3 | 179.7 | 17.5 | 123.2 | 39.5 | 174.0 | .70 | 1.03 | .71 |
| 1955 4/ | 39.5 | 130.9 | 26.8 | 196.6 | 19.0 | 134.0 | 43.0 | 178.0 | .72 | 1.10 | .75 |

1/ From Feed Statistics, page 2, March 1955, and Feed Situation, November 1955, table 2, AMS.

2/ Includes byproduct feeds, imported grains, and domestic wheat and rye fed.

3/ Stocks do not necessarily equal supply less feed and other utilization because of a difference in the crop year for different feed grains.

4/ Preliminary estimates based on indications in October 1955.

Pasture conditions on November 1 for the country as a whole were the best for the date since 1951 and about equal to the 1944-53 average. They were considerably better than a year earlier in much of the South but were considerably worse in the western part of the Corn Belt. This may mean that more hay or other roughage will be fed per animal unit in the latter area in 1955-56 than in 1954-55. But it is too early to tell how the quantity of hay fed throughout the United States in 1955-56 is likely to compare with past years. It will depend a great deal on the kind of weather experienced during the feeding season.

Lower feed prices were chiefly responsible for the improved relationship between prices of feed and prices of livestock and livestock products. Returns per $1.00 of feed cost were higher for most livestock enterprises in September 1955 than a year earlier (table 5). However, hog- and sheep-raising enterprises were exceptions.

Returns per $1.00 of feed cost in mid-September relative to the 1937-51 average were highest for broilers and lowest for sheep raising. Returns from hogs, milk, and eggs were much alike in one respect--in each instance, returns per $1.00 of feed cost were 6 percent below the 1937-51 average.

Returns from cattle feeding in the 1954-55 season were about 5 percent below the 1920-52 average. What they will be in 1955-56 will depend a great deal on the price of fat cattle next spring and summer.

## SEED

The index of prices paid by farmers for seed was about 2 percent higher in mid-September than a year earlier. The simple average of April and September prices was about 7 percent higher than the comparable figure for 1954. It is expected that prices paid by farmers for seeds will average somewhat lower in 1956 than in 1955 assuming no material expansion in conservation programs, but the situation will vary considerably by kinds and varieties.

Prices paid for most legume and grass seeds are quite a little lower this fall than last fall and are below the 1949-53 average. In mid-September farmers paid less for 14 legume, grass, and grain seeds than in the spring. Compared with the fall of 1954, the mid-September retail prices this year were lower for 15 seeds and higher for 14.

Prices received by growers this fall are lower than last fall for 18 of 26 legume and grass seeds and are below the 5-year average for 23 seeds. In mid-October the most marked declines from last year occurred in timothy, tall fescue, Sudangrass, perennial ryegrass, orchardgrass, alfalfa, common ryegrass, redtop, and red clover. Prices of these seeds were a third to a half lower than last year. Growers' prices of only 8 seeds--purple vetch, smooth brome, crimson clover, Austrian Winter peas, common vetch, crested wheatgrass, Ladino clover, and hairy vetch--were higher in mid-October of this year than last year.

Table 5.- Returns per $1.00 of feed cost of livestock enterprises, United States, Sept. 15, 1955, with comparisons [1]

| Livestock enterprise or product | 1937-51 average Sept. | Sept. 15, 1953 | Sept. 15, 1954 | Feb. 15, 1955 | Sept. 15, 1955 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.91 | 1.93 | 1.24 | 1.48 | 1.80 |
| Broilers | [2]1.64 | 1.61 | 1.35 | 1.50 | 1.61 |
| Turkeys | 1.90 | 1.61 | 1.35 | 1.48 | 1.70 |
| Milk | 2.17 | 2.03 | 1.85 | 1.78 | 2.04 |
| Butterfat | 1.71 | 1.45 | 1.21 | 1.22 | 1.40 |
| Hogs | 1.65 | 1.96 | 1.57 | 1.43 | 1.55 |
| Sheep raising | 1.70 | 1.36 | 1.37 | 1.30 | 1.30 |
| Beef raising | 1.83 | 1.47 | 1.44 | 1.47 | 1.59 |
| Cattle feeding | [3]1.25 | 1953-54<br>1.46 | | 1954-55<br>1.19 | |
| | Index numbers (1937-51=100) | | | | |
| Eggs | 100 | 101 | 65 | 77 | 94 |
| Broilers | 100 | 98 | 82 | 91 | 98 |
| Turkeys | 100 | 85 | 71 | 78 | 89 |
| Milk | 100 | 94 | 85 | 82 | 94 |
| Butterfat | 100 | 85 | 71 | 71 | 82 |
| Hogs | 100 | 119 | 95 | 87 | 94 |
| Sheep raising | 100 | 80 | 81 | 76 | 76 |
| Beef raising | 100 | 80 | 79 | 80 | 87 |
| Cattle feeding | [3]100 | 1953-54<br>117 | | 1954-55<br>95 | |

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[1] Quantities of feed used in calculating the cost of feed follow: Per dozen eggs - 7 lbs. poultry ration; per lb. of broiler - $4\frac{1}{2}$ lbs. chick starter, 1935-39, $3\frac{1}{2}$ lbs. chick starter, 1951-53, 3 lbs. broiler mash, 1954-55; per lb. of turkey - $5\frac{1}{2}$ lbs. poultry ration before 1950; $5\frac{1}{4}$ lbs. 1950-53, 5 lbs. 1954-55; per 100 lbs. hogs - $7\frac{1}{2}$ bu. corn plus 20 lbs. soybean meal, per 100 lbs. milk - 30 lbs. concentrate ration fed to milk cows in milk-selling areas plus the value of 110 lbs. hay; per lb. of butterfat - $7\frac{1}{2}$ lbs. of concentrate ration fed to milk cows in cream-selling areas plus the value of $27\frac{1}{2}$ lbs. hay in Minnesota and Iowa; per 100 lbs. beef cattle - 3 bu. corn plus 600 lbs. hay; per 100 lbs. sheep and lambs - 2 bu. corn plus 1,500 lbs. hay. Assumed 19 lbs. wool produced for each 100 lbs. sheep and lamb produced. The quantity of hay for milk cows, beef cattle, and sheep includes an allowance for silage and pasture. Feed nutrients from pasture assumed to cost a fourth as much as nutrients from hay. Cattle feeding returns are based on table 1, Livestock and Meat Situation, A.M.S., August 15, 1955, which is based on Corn Belt experience.

[2] Average for March.

[3] 1920-52 average.

The total supply (1955 production plus carryover) of 26 legume and grass seeds for the 1955-56 planting season, estimated at 1,044,000,000 pounds, is 10 percent larger than last year but 11 percent below the 1949-53 average. The larger production this year more than offsets the smaller carryover. Current supply of the legume seeds--alfalfa and the clovers except crimson which is grouped with the winter cover crops--is 15 percent larger than last year and 18 percent larger than the 5-year average. Supply of the grass seeds, exclusive of ryegrass which is grouped with winter cover crops, is 18 percent larger than last year and 22 percent larger than the average. The total supply of the legume and grass seeds, which are sown mostly in the spring, is 16 percent larger than last year and 19 percent larger than the average. The supply of the winter cover-crop seeds, which are sown chiefly in the fall, is 1 percent smaller than last year and 44 percent below the average.

Current supply of the 26 seeds is 47 percent larger than the domestic disappearance last year and 37 percent larger than the 5-year average disappearance. Supplies of alfalfa, Ladino clover, timothy, fescues, bentgrass, Sudangrass, and the ryegrasses are more than ample to meet average domestic requirements and still leave a carryover next year equal to the average for the 5-year period. But the supply of each of the other seeds, particularly red clover, sweetclover, white clover, orchardgrass, redtop, smooth brome, and crested wheatgrass of the seeds sown chiefly in the spring, would not be sufficient to meet the average domestic requirements without reducing the carryover if normal rates of sowing were used. Under such circumstances the carryover of these seeds at the close of the 1955-56 planting season would fall below the 1949-53 average.

## FERTILIZER

Average prices paid by farmers for plant nutrients in commercial fertilizer have declined slightly in the last 3 years. With 1947-49 equal to 100, index numbers of prices paid for fertilizer in 1952, 1953, 1954, and 1955 were 109, 110, 108, and 106, respectively. Although realized gross farm income has declined relatively more than fertilizer prices since 1951, farmers have continued to use more fertilizer nutrients each year. This is in contrast to changes in use of fertilizer nutrients during past periods of declining farm income.

In recent years, the use of fertilizer nutrients was not as closely related to changes in farm incomes as it was before World War II. Of course, the recent decline in income is small compared with the drop that occurred after 1929. During the readjustment period following World War I, use of fertilizer nutrients declined materially from 1920 to 1921 with the sharp drop in farm income, even though fertilizer prices fell substantially. A somewhat similar thing happened during the major depression of the 1930's. But following the more moderate reductions in farm income after 1948 and again after 1952, consumption of fertilizer rose substantially, although prices of fertilizer declined only slightly. In

1953 when realized gross farm income declined 5 index points from 1952 levels, the use of principal plant nutrients increased 9 points over the preceding year, with only a slight decline in prices of fertilizer.

One of the reasons for the increase in use of principal plant nutrients has been the continued rise in the analysis of fertilizers. Although the quantity of all fertilizers used was about 640,000 tons less in 1953-54 than in 1952-53, the lower tonnage in 1953-54 contained nearly 250,000 tons more plant nutrients.

But aside from this, farmers apparently consider fertilizer a relatively good buy at present prices. Farmers spent 16 percent more for all production goods and services in 1954 than their average annual expenditures for such things in 1947-49. But their expenditures for fertilizer and lime went up 51 percent between 1947-49 and 1954. Comparable increases in other expenditures over that period were: Hired labor, 6 percent; feed, seed, and livestock, 11 percent; and all nonfarm commodities used in farm production, 16 percent.

Quantities of nitrogen (N) and potash ($K_2O$) that will be available for use as fertilizer for the year ending June 30, 1956, are each expected to be more than 4 percent larger than during the preceding year. Supplies of phosphoric oxide ($P_2O_5$) in 1955-56 are expected to be about the same as those available in 1954-55.

## BUILDING MATERIALS

Prices paid by farmers for building and fencing materials were 4 percent higher in mid-September than a year earlier. The increase from June 1954 to September 1955 amounted to a little more than 5 percent. According to the index published by the Bureau of Labor Statistics, in the 15-month period wholesale prices of building materials advanced more than 8 percent. Since September, however, prices of lumber have dropped considerably in the Pacific Northwest.

The upswing in prices paid by farmers for building and fencing materials started in mid-1954 with a speedup in all building activity. It followed a 3-year period of fairly stable prices for this group of items.

In concrete terms the situation looks about like this: In 1935-39 the average farmer could buy the materials used in the construction of a typical poultry house large enough for 200 layers for about $300. Now the same materials would cost him about $840, or about 180 percent more than in 1935-39. He could buy the materials for a typical barbed-wire fence (4 strands of 4-point wire on alternate wood and steel posts set 1 rod apart) for about 60 cents a rod in 1935-39. At present prices they would cost him about $1.53 a rod, or about 155 percent more than in the prewar period.

## FARM SUPPLIES

The index of prices paid by farmers for miscellaneous farm supplies was 5 points (2 percent) lower on September 15 than a year earlier. It was 13 percent above the 1947-49 average and 89 percent higher than in 1935-39. Baler twine and wire, binder twine, bale ties, and containers are important items in this category of farm costs. Prices paid for these items have gone up relatively less than the average for all production items since 1935-39.

## PESTICIDES

Available information indicates that use of pesticides was somewhat greater in 1955 than in 1954. More rainfall in the eastern Cotton Belt compared with a year earlier increased insect infestation and also made more frequent dusting and spraying necessary to replace the insecticides washed off by the rain. Supplies of pesticides were sufficient to meet this greater demand, and early indications are that stocks on hand at the end of the season are somewhat higher than a year ago.

Prices of pesticides as a group were about the same in 1955 as in 1954. However, manufacturers' prices of benzene hexachloride currently are about 10 percent lower than last January and prices of copper sulphate are about 40 percent higher.

Although changes in prices since 1954 have been small, the decline in prices of most pesticides in the last few years has been substantial. Manufacturers' prices of such important insecticides as benzene hexachloride and DDT are only one-third and three-fifths as high, respectively, as they were in the fall of 1951. Other insecticides, such as aldrin, calcium arsenate, lindane, and toxaphene are also lower. Prices of some pesticides, including nicotine sulphate and copper sulphate, are somewhat higher than they were 4 years ago, but the trend in prices of most pesticides has been downward.

Use of pesticides on farms has increased in the last decade. Farmers spent an estimated $250 million for pest-control materials and the application of some of these materials by custom operators in 1952. Net acreage sprayed or dusted one or more times was equal to one-sixth of the acreage of principal crops harvested in 1952. About half of this acreage was sprayed to control insects and diseases, and the other half for control of weeds and brush. Probably less than 5 percent of the acreage was sprayed for both purposes.

## FARM REAL ESTATE

Prices of farm real estate continued to strengthen in most areas of the country during the first half of 1955. Increases of 2 percent or more occurred in three-fourths of the States during the 4 months ended

July 1. The national index of average value per acre returned to 129 (1947-49=100), a point reached once before in 1952, and 23 percent above the previous peak reached in 1920.

All major type-of-farming areas in the eastern two-thirds of the country, except the burley tobacco area, showed advances in farm real estate values during the year ended July 1, 1955 (table 6). Largest gains were reported in the Corn Belt, general farming, and Lake States dairy regions. Increases were more moderate in the eastern and central cotton, and eastern dairy areas. Nationally, values increased 5 percent during the year.

Although land values in most areas were at or near their all-time peak at mid-1955, all other items used in farm production, except fertilizer and motor supplies, have increased more relative to the 1910-14 period than has farm real estate. Land values have little more than doubled since 1912-14, whereas farm wage rates have increased 5-fold, building materials and motor vehicles have become 3-1/2 times as high, and farm machinery and livestock, 3 times as high.

Land values (including improvements) also have increased less than prices of farm commodities, although the spread has narrowed in recent years (fig. 5). Land values lagged behind the rise in commodity prices from 1941 to 1950, but since then they have continued to rise despite the downturn in commodity prices. Currently, their relationship is about the same as in 1940.

Much of the strength shown in market prices for farmland in recent years stems from the strong demand for additional acreage needed to make more efficient use of labor and farm machinery. Greatly increased farm wage rates and widespread nonfarm employment opportunities have provided strong incentives for greater labor efficiency and have helped to speed up the farm-enlargement process. Preliminary summaries from the 1954 Census show, for example, that the average size of farm increased nearly 10 percent between 1950 and 1954. Possibly as many as 500,000 farms were absorbed by farm enlargement, or were converted to nonfarm uses during the 5-year period.

Renting or buying additional land is the principal means by which individual farmers can increase their acreages. Only a limited number of such opportunities are available each year, and farm operators have been active bidders for both rental tracts and land that was for sale. Farmers as a group (owner-operators and tenants) bought about two-thirds of all farms and tracts of land sold during 1954-55, and nearly a third of all purchases were for farm enlargement. The proportion of all transfers that were bought for farm enlargement was considerably higher than average in areas where the greatest gain in efficiency can be achieved by larger farms. This was evident especially in the winter wheat and eastern Corn Belt areas. In contrast, farm enlargement has taken place at a slower rate in dairy and some other areas where the rate of mechanization has been less rapid.

Table 6.- Farm Real Estate: Index numbers of average value per acre, and related data, by major type-of-farming areas, July 1955, with comparisons

| Type-of-farming area | March 1 | | | | July | | Change July 1954 to July 1955 |
|---|---|---|---|---|---|---|---|
| | 1952 | 1953 | 1954 | 1955 | 1954 | 1955 | |
| | Index numbers (1947-49=100) | | | | | | Percent |
| Eastern dairy | 125 | 126 | 120 | 124 | 123 | 127 | +3 |
| Lake-States dairy | 126 | 127 | 121 | 124 | 121 | 128 | +6 |
| General farming | 126 | 125 | 117 | 122 | 118 | 125 | +6 |
| Eastern Corn Belt | 138 | 140 | 139 | 145 | 140 | 149 | +6 |
| Western Corn Belt | 133 | 130 | 126 | 132 | 128 | 137 | +7 |
| Winter wheat | 137 | 129 | 128 | 137 | 130 | 137 | +5 |
| Spring wheat | 136 | 137 | 136 | 138 | 135 | 143 | +6 |
| Eastern cotton | 122 | 128 | 121 | 121 | 122 | 123 | +1 |
| Central cotton | 131 | 132 | 125 | 125 | 127 | 131 | +3 |
| Texas-Oklahoma cotton | 131 | 127 | 118 | 124 | 127 | 135 | +6 |
| Burley tobacco | 131 | 131 | 122 | 115 | 124 | 118 | -5 |
| Eastern tobacco | 132 | 137 | 124 | 135 | 138 | 139 | +1 |

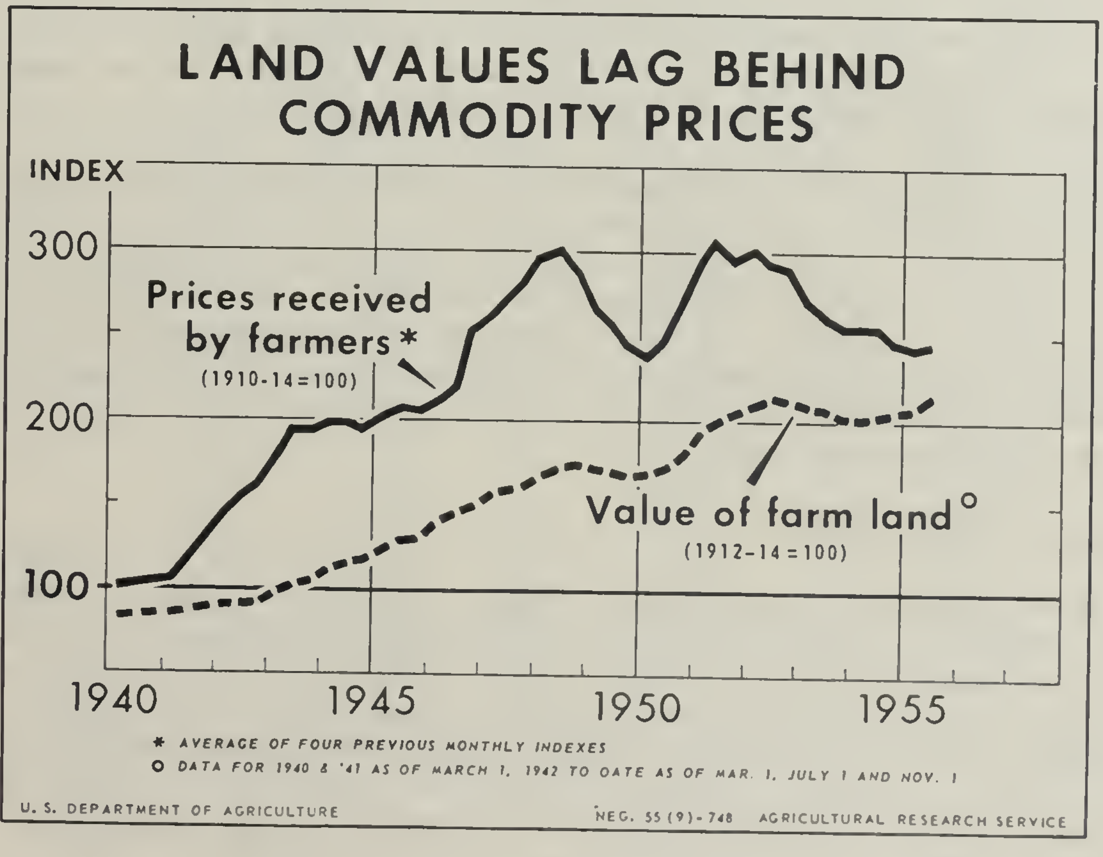

Figure 5

### Cash Rents

Although the practice of renting a whole farm for cash has declined steadily in recent decades, nearly two-fifths of all tenants in the North Central States pay cash for hay and pastureland in addition to a share of the crops grown on other land. Whether such cash rents are to be paid, and their amounts, are often bargaining points in a farm lease. On the average, however, cash rent per acre has remained a relatively constant proportion of the market value of rented land since 1952. Stated differently, cash rents have increased at about the same rate as have market values, and, like land values, they were at or near record levels in most of the North Central States in 1955. In all States, the amount of cash rent paid for farmland was about normal in relation to the market value of rented land. The ratio of gross cash rent to value shown in tables 7 and 8 applied to the estimated market value of the land on a particular farm is a general guide as to what the land would have rented for in 1955.

## INTEREST, TAXES AND INSURANCE

### Mortgage Interest

Interest payments on farm-mortgage (real estate) debt may reach $440 million in 1956. This would be about 7 percent above the $411 million estimated for 1955. Farm-mortgage debt, which is increasing in 1955 at a somewhat higher rate than in recent years, is expected to exceed $9.0 billion on January 1, 1956, and to continue upward during that year. A total of $9.0 billion on January 1, 1956, would be about 10 percent above the beginning of 1955.

Interest rates on farm mortgages appear to be relatively stable after softening slightly in 1954. The outlook is for steady to slightly firmer rates during the next few months. The usual keen competition between lenders appears to have sharpened somewhat in recent months. This highly competitive situation may serve to hold interest rates on farm-mortgage loans in 1956 near present levels. As a result, increases in mortgage interest payments are expected to be essentially a function of increases in farm-mortgage debt.

### Non-Real-Estate Interest

Interest payments on short-term, non-real-estate loans in 1955 may total as much as 10 percent more than in 1954, mainly because of an increase in the amount of credit used. The average amount of each loan has increased and more farmers have probably used credit this year. Interest rates, however, have also risen slightly because of tighter money market conditions. For 1956, interest rates are expected to remain near current levels, and no great change in the amount of non-real-estate credit used by farmers is in prospect for the near future.

Table 7.- Cash rent per acre for farms rented wholly for cash, and ratio of gross rent to value, North Central States, 1952-55 1/

| State | Cash rent per acre | | | | Ratio gross rent to value | | | |
|---|---|---|---|---|---|---|---|---|
| | 1952 | 1953 | 1954 | 1955 | 1952 | 1953 | 1954 | 1955 |
| | Dollars | Dollars | Dollars | Dollars | Percent | Percent | Percent | Percent |
| Ohio | 9.30 | 9.30 | 9.70 | 10.45 | 5.4 | 5.6 | 5.2 | 5.4 |
| Indiana | 12.50 | 13.00 | 13.85 | 12.95 | 6.0 | 6.5 | 6.9 | 5.8 |
| Illinois | 14.70 | 15.10 | 15.90 | 16.50 | 5.4 | 5.5 | 5.6 | 5.6 |
| Michigan | 8.25 | 8.90 | 9.10 | 9.00 | 6.2 | 6.1 | 6.5 | 6.4 |
| Wisconsin | 10.40 | 11.20 | 10.80 | 11.30 | 7.6 | 8.3 | 8.7 | 8.1 |
| Minnesota | 8.65 | 9.30 | 9.45 | 9.90 | 6.3 | 6.8 | 6.9 | 6.8 |
| Iowa | 12.65 | 13.35 | 13.50 | 14.05 | 5.5 | 5.9 | 6.1 | 6.0 |
| Missouri | 6.80 | 6.80 | 6.70 | 7.10 | 6.7 | 7.1 | 6.8 | 6.8 |
| North Dakota | 2.80 | 2.75 | 3.00 | 2.70 | 7.5 | 7.2 | 7.6 | 7.6 |
| South Dakota | 4.40 | 4.20 | 4.10 | 4.30 | 7.0 | 6.8 | 7.1 | 7.5 |
| Nebraska | 6.00 | 5.40 | 5.90 | 6.50 | 5.9 | 5.7 | 6.1 | 6.4 |
| Kansas | 5.70 | 5.85 | 5.40 | 5.65 | 6.6 | 6.5 | 6.4 | 6.1 |

1/ Estimates supplied by crop reporters, as of April 1, for calendar years indicated.

Table 8.- Cash rent per acre for pastureland and ratio of gross rent to value, North Central States, 1952-55 1/

| State | Cash rent per acre | | | | Ratio gross rent to value | | | |
|---|---|---|---|---|---|---|---|---|
| | 1952 | 1953 | 1954 | 1955 | 1952 | 1953 | 1954 | 1955 |
| | Dollars | Dollars | Dollars | Dollars | Percent | Percent | Percent | Percent |
| Ohio | 5.70 | 5.30 | 6.50 | 6.60 | 5.4 | 5.4 | 5.1 | 5.2 |
| Indiana | 7.15 | 6.40 | 6.95 | 6.90 | 4.6 | 3.9 | 4.5 | 4.3 |
| Illinois | 7.10 | 7.40 | 7.65 | 7.60 | 3.4 | 3.3 | 3.4 | 3.6 |
| Michigan | 3.25 | 3.00 | 3.40 | 3.45 | 5.9 | 5.3 | 5.6 | 5.6 |
| Wisconsin | 4.40 | 4.40 | 4.50 | 5.40 | 7.5 | 7.9 | 8.6 | 9.1 |
| Minnesota | 4.70 | 4.90 | 5.10 | 5.05 | 6.4 | 6.4 | 6.6 | 6.6 |
| Iowa | 8.00 | 7.95 | 8.05 | 8.25 | 5.2 | 5.2 | 5.4 | 5.1 |
| Missouri | 4.50 | 4.50 | 4.20 | 4.35 | 5.8 | 6.3 | 6.0 | 5.7 |
| North Dakota | 1.00 | 1.10 | 1.20 | 1.15 | 5.0 | 5.4 | 5.5 | 5.5 |
| South Dakota | 1.70 | 1.75 | 1.80 | 1.90 | 4.7 | 5.1 | 5.5 | 5.6 |
| Nebraska | 3.50 | 3.75 | 3.65 | 3.90 | 5.6 | 5.8 | 5.7 | 5.8 |
| Kansas | 3.35 | 3.20 | 3.20 | 3.45 | 5.9 | 5.3 | 5.8 | 5.8 |

1/ Estimates supplied by crop reporters, as of April 1, for calendar years indicated.

Because of the increase in outstanding non-real-estate loans, interest costs rose during 1955 in nearly all areas. The largest credit expansion was in the two North Central regions where the financing of record numbers of feeder cattle was an important factor. The rise in loans was the smallest in the East and West South Central States where acreage controls on cotton may have reduced the amount of production credit needed.

## Property Taxes

Total taxes levied on farm real and personal property in the United States in 1955, payable largely in 1956, are expected to increase again this year. Preliminary data indicate a rise of 5 percent.

Department of Commerce data show that State and local governments as a whole spent about 9 percent more in the first 2 quarters of 1955 than they did a year earlier. Inquiries in various States suggest that the major reason for this increase is found in the growing costs of education. The data thus far received, however, indicate that rural areas are not experiencing as rapid a rise in these costs as are urban areas.

Taxes paid on farm real estate in the United States in 1955 (levied in 1954) totaled $906 million. Payments in 1956 are expected to be about $950 million. The amount paid in 1955 was about 53 percent greater than the average for the period 1947-49. It is anticipated that payments in 1956 will be about 60 percent higher than the average for this period.

Taxes paid per acre on farm real estate averaged $0.85 in 1955. Based on the average for the period 1910-14, the index of taxes paid per acre in 1955 was 409. When compared with average payments for the period 1947-49, the index was 152. Indexes for the year 1956 will probably be about 430 and 160, respectively.

Taxes paid on personal property of farmers in 1956 (levied in 1955) probably will increase about 5 percent--the same as for farm real estate. This is in marked contrast to the change reported in the last 2 years, in which farm personal property taxes decreased 4 percent and 1 percent, respectively.

Livestock represents about half the value of all farm personal property assessments. Changes in this category strongly influence the total. In most States, livestock assessments made as of January 1, 1953, were drastically reduced from their peak assessment level of the year before; further reductions were made in some States in 1954, but also in 1954, a number of States increased livestock assessments.

Generally, taxes paid in 1956 will be based upon assessments as of January 1, 1955. Although data are not yet available, assessed values per head of livestock on that date are expected to remain virtually unchanged from a year earlier. Total valuations probably will be slightly higher because of the increase in livestock numbers during 1954.

As a result, it is anticipated that the taxes paid on personal property will increase in proportion to changes in the tax rate.

Taxes paid on farm personal property totaled $224 million in 1955. It is anticipated that these payments will approximate $235 million in 1956. These 1956 payments will be some 90 percent higher than the average of 1947-49.

On a typical 160-acre hog-dairy farm in the Corn Belt, taxes payable on farm real estate were $360 in 1954 and $376 in 1955. It is expected that these taxes will increase to $391 in 1956. Personal property tax payments amounted to $117 on such farms in 1954 and $116 in 1955. An increase to about $122 is expected in 1956.

## Insurance

The expenditures of farmers for property insurance in 1955 probably will be higher than in either 1953 or 1954. Even though insurable farm property values do not rise in 1955, farmers who renew their policies during the year will tend to increase their insurance because of the prevalence of underinsurance. Premium costs, therefore, will tend to rise for some time.

Information is not available for all classes of insurance companies and types of farm property, but the insurance carried by farm mutual fire insurance companies (about a third of which also offer wind insurance) has increased steadily in recent years--7 percent in 1953 and 6 percent in 1954. The increased assessments paid by farmers to these companies have been due primarily to increases in amounts of insurance carried and the addition of coverage against windstorm, rather than to increases in rates charged for fire insurance. Their assessment rates averaged about 26.5 cents per $100 of insurance in 1954, compared with 25.1 cents in 1953.

In 1954, losses paid by these companies averaged 16.4 cents per $100 of insurance in force, compared with 14.8 cents in 1953. In 1954, operating expenses amounted to 7.5 cents, compared with 7.8 cents in 1953. Therefore, the total cost (losses plus operating expenses) amounted to 23.9 cents in 1954, compared with 22.6 cents in 1953. The difference between the "cost" and assessment income was used to build up company safety funds, which belong to members and are used to stabilize assessment rates between years.

Mainly because of drought, indemnities paid to farmers during 1955 by the Federal Crop Insurance Corporation are expected to exceed premium collections. On the other hand, the damage to growing crops by hail during the year was about average, but because of the increase in insurance carried by farmers, the net cost of crop-hail insurance will be greater than in 1954 and in most other recent years. Except for sales by three State hail departments (North Dakota, Montana, and Colorado), crop-hail insurance is sold by private insurance companies.

## COST SITUATION ON 21 TYPES OF FARMS

There have been substantial differences by type of farm in the trend of farm cost rates and of costs per unit of production since the end of World War II. These differences are partially explained by the fact that certain expenditure items are relatively more important on some types of farms than on others, and adjustments to reduce costs have been possible to a greater extent on some types than on others.

### Change in Cost Rates

Annual estimates of costs and returns are available for several important types of farms in 21 different areas. Cash expenditures in 1954 for goods and services used in production on these farms are presented in table 9.

Expenditures for power and machinery, including custom work hired, accounted for less than 25 percent of all production expenditures in 1954 on some types of farms but for more than 65 percent on others (table 10). Expenditures for hired labor ranged from a low of 5 percent to a high of 38 percent. Expenditures for feed ranged from a low of less than 1 percent to a high of 38 percent.

The differing trends in farm cost rates and the differences among farms in the relative importance of various cost items help to explain why the index of prices paid for goods and services used in production has increased more on some types of farms in recent years than on others (fig. 6). On irrigated cotton farms in the High Plains area of Texas, for example, cost rates were 5 percent higher in 1954 than in 1947-49, whereas on cash-grain farms in the Corn Belt they were 22 percent higher.

Another reason for the differences among farms in the trend of farm costs is the fact that there are important regional differences in the trend of some cost rates. Farm wage rates in the central northeastern dairy area, for example, were 42 percent higher in 1954 than in 1947-49, whereas on cotton farms, wage rates tended to change little or to be lower (table 11).

### Cost per Unit of Production

Cost per unit of production was higher on all 21 types of farms in 1954 than in 1947-49 (fig. 7). Increases ranged from 1 percent on northeastern dairy and northwestern wheat-pea farms to 40 percent on Southern Piedmont cotton farms.

Dissimilar changes in cost rates, in crop yields and in overall efficiency help to explain why costs increased more on some farms than on others (table 12). For example, cost per unit of production increased only 1 percent on wheat-pea farms in Washington and Idaho despite a

Table 9.- Cash expenditures and related data, specified types of farms, 1954

| Type of farm and location | Farmland |  | Farm labor |  | Total farm capital January 1 | Total cash expenditures 2/ |
|---|---|---|---|---|---|---|
|  | Total | Cropland harvested | Total | Hired |  |  |
|  | Acres | Acres | Hours | Hours | Dollars | Dollars |
| Dairy farms: |  |  |  |  |  |  |
| Central Northeast | 199 | 75 | 4,450 | 710 | 26,300 | 5,932 |
| Eastern Wisconsin | 126 | 66 | 4,620 | 710 | 33,010 | 4,712 |
| Western Wisconsin | 142 | 60 | 4,140 | 470 | 22,220 | 3,921 |
| Corn Belt farms: |  |  |  |  |  |  |
| Hog-dairy | 162 | 100 | 4,400 | 620 | 42,500 | 5,898 |
| Hog-beef raising | 216 | 97 | 3,470 | 310 | 34,070 | 3,834 |
| Hog-beef fattening | 198 | 137 | 4,120 | 700 | 56,450 | 12,622 |
| Cash grain | 228 | 189 | 3,310 | 500 | 86,640 | 6,784 |
| Tobacco farms: |  |  |  |  |  |  |
| Tobacco-livestock (Kentucky) | 113 | 30 | 4,070 | 1,220 | 23,060 | 2,819 |
| Tobacco-cotton (North Carolina) | 100 | 41 | 7,060 | 4,030 | 20,760 | 4,625 |
| Cotton farms: |  |  |  |  |  |  |
| Southern Piedmont | 162 | 49 | 3,190 | 600 | 13,970 | 1,653 |
| Delta of Mississippi | 45 | 30 | 3,100 | 420 | 11,340 | 499 |
| Black Prairie, Texas | 169 | 102 | 3,750 | 1,240 | 27,050 | 2,990 |
| High Plains, Texas (nonirrigated) | 343 | 227 | 3,130 | 1,210 | 35,910 | 4,178 |
| High Plains, Texas (irrigated) | 309 | 246 | 7,900 | 5,630 | 86,310 | 16,471 |
| Spring wheat farms (Northern Plains): |  |  |  |  |  |  |
| Wheat-corn-livestock | 476 | 320 | 3,910 | 480 | 41,480 | 4,457 |
| Wheat-small grain-livestock | 680 | 413 | 3,310 | 640 | 42,640 | 5,129 |
| Wheat-roughage-livestock | 760 | 409 | 3,460 | 230 | 39,230 | 4,829 |
| Winter wheat farms: |  |  |  |  |  |  |
| Wheat-pea (Washington and Idaho) | 512 | 355 | 3,300 | 1,000 | 137,160 | 9,159 |
| Sheep ranches: |  |  |  |  |  |  |
| Northern Plains | 6,232 | 230 | 8,160 | 3,960 | 84,000 | 11,035 |
| Cattle ranches: |  |  |  |  |  |  |
| Northern Plains | 4,120 | 284 | 4,450 | 1,110 | 69,850 | 5,637 |
| Intermountain region | 1,690 | 155 | 4,750 | 730 | 62,880 | 4,460 |

---

1/ Preliminary.

2/ For goods and services used in production.

## Table 10.- Distribution of cash farm expenditures, specified types of farms, 1954

| Type of farm and location | Power and machinery 1/ | Hired labor 2/ | Fertilizer and lime | Feed and seed 3/ | Live-stock | Buildings and fences | Taxes | Other |
|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Dairy farms: | | | | | | | | |
| Central Northeast | 27 | 8 | 5 | 38 | 1 | 7 | 7 | 7 |
| Eastern Wisconsin | 46 | 7 | 4 | 16 | 1 | 10 | 7 | 9 |
| Western Wisconsin | 43 | 6 | 4 | 21 | 1 | 9 | 8 | 8 |
| Corn Belt farms: | | | | | | | | |
| Hog-dairy | 37 | 9 | 5 | 23 | 1 | 9 | 8 | 8 |
| Hog-beef raising | 35 | 7 | 6 | 28 | 1 | 7 | 9 | 7 |
| Hog-beef fattening | 21 | 5 | 2 | 17 | 41 | 5 | 5 | 4 |
| Cash grain | 43 | 8 | 10 | 12 | 1 | 8 | 15 | 3 |
| Tobacco farms: | | | | | | | | |
| Tobacco-livestock (Kentucky) | 28 | 26 | 13 | 8 | 2 | 7 | 10 | 6 |
| Tobacco-cotton (North Carolina) | 22 | 38 | 14 | 4 | 1 | 6 | 2 | 13 |
| Cotton farms: | | | | | | | | |
| Southern Piedmont | 39 | 9 | 24 | 9 | 3 | 7 | 4 | 5 |
| Delta of Mississippi | 43 | 28 | 7 | -- | 2 | 4 | 11 | 5 |
| Black Prairie, Texas | 52 | 23 | 2 | 10 | 1 | 6 | 4 | 2 |
| High Plains, Texas (nonirrigated) | 63 | 19 | -- | 7 | 1 | 2 | 5 | 3 |
| High Plains, Texas (irrigated) | 55 | 26 | -- | 2 | -- | 4/14 | 2 | 1 |
| Spring wheat farms (Northern Plains): | | | | | | | | |
| Wheat-corn-livestock | 55 | 10 | -- | 9 | 5 | 6 | 11 | 4 |
| Wheat-small grain-livestock | 67 | 12 | -- | 3 | 1 | 5 | 10 | 2 |
| Wheat-roughage-livestock | 66 | 5 | -- | 9 | 2 | 5 | 10 | 3 |
| Winter wheat farms: | | | | | | | | |
| Wheat-pea (Washington and Idaho) | 51 | 13 | 11 | 4 | 1 | 2 | 8 | 10 |
| Sheep ranches: | | | | | | | | |
| Northern Plains | 21 | 27 | -- | 19 | 10 | 2 | 10 | 11 |
| Cattle ranches: | | | | | | | | |
| Northern Plains | 45 | 14 | -- | 5 | 8 | 2 | 14 | 12 |
| Intermountain region | 39 | 13 | -- | 10 | 9 | 4 | 22 | 3 |

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1/ Including ginning, hauling, and other machine work hired. 2/ Including payments to croppers.
3/ Including cost of grazing permits. 4/ Including irrigation wells and water-distribution systems.

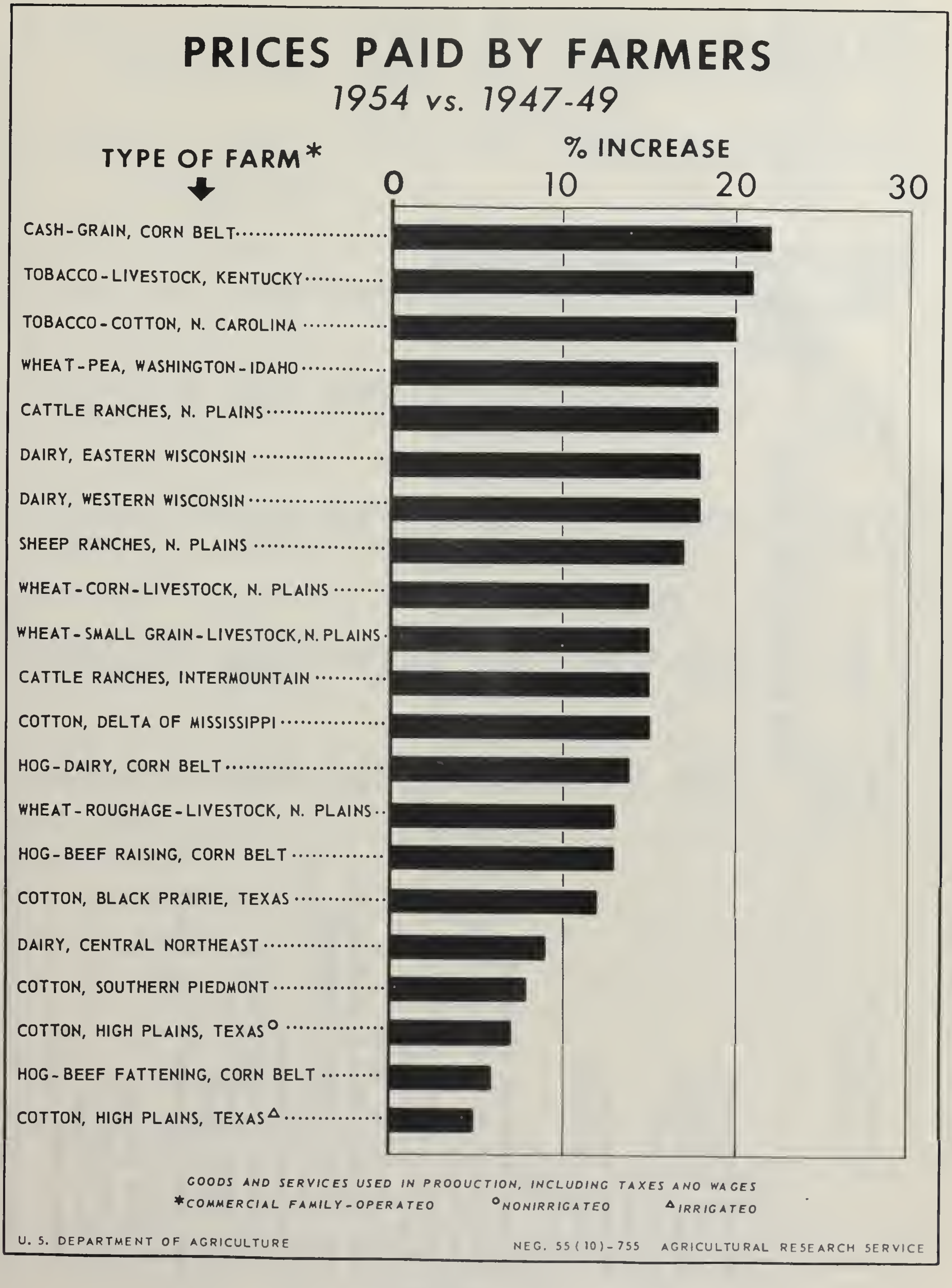
PRICES PAID BY FARMERS
1954 vs. 1947-49
TYPE OF FARM*
% INCREASE
0
10
20
30
CASH-GRAIN, CORN BELT
TOBACCO-LIVESTOCK, KENTUCKY
TOBACCO-COTTON, N. CAROLINA
WHEAT-PEA, WASHINGTON-IDAHO
CATTLE RANCHES, N. PLAINS
DAIRY, EASTERN WISCONSIN
DAIRY, WESTERN WISCONSIN
SHEEP RANCHES, N. PLAINS
WHEAT-CORN-LIVESTOCK, N. PLAINS
WHEAT-SMALL GRAIN-LIVESTOCK, N. PLAINS
CATTLE RANCHES, INTERMOUNTAIN
COTTON, DELTA OF MISSISSIPPI
HOG-DAIRY, CORN BELT
WHEAT-ROUGHAGE-LIVESTOCK, N. PLAINS
HOG-BEEF RAISING, CORN BELT
COTTON, BLACK PRAIRIE, TEXAS
DAIRY, CENTRAL NORTHEAST
COTTON, SOUTHERN PIEDMONT
COTTON, HIGH PLAINS, TEXAS°
HOG-BEEF FATTENING, CORN BELT
COTTON, HIGH PLAINS, TEXAS△
GOODS AND SERVICES USED IN PRODUCTION, INCLUDING TAXES AND WAGES
*COMMERCIAL FAMILY-OPERATED
°NONIRRIGATED
△IRRIGATED
U. S. DEPARTMENT OF AGRICULTURE
NEG. 55(10)-755 AGRICULTURAL RESEARCH SERVICE

Figure 6

Table 11.- Prices paid by farmers, and related data, specified types of farms, 1954 1/ 2/

| Type of farm and location | Prices or rates paid | | | | Relative importance 3/ | | |
|---|---|---|---|---|---|---|---|
| | Goods and services | Hired labor | Feed, seed and livestock | Nonfarm goods and services | Hired labor | Feed, seed and livestock | Nonfarm goods and services |
| | Index numbers (1947-49=100) | | | | Percent | Percent | Percent |
| Dairy farms: | | | | | | | |
| Central Northeast | 109 | 142 | 94 | 119 | 8 | 40 | 52 |
| Eastern Wisconsin | 118 | 122 | 95 | 124 | 7 | 17 | 76 |
| Western Wisconsin | 118 | 123 | 95 | 128 | 6 | 22 | 72 |
| Corn Belt farms: | | | | | | | |
| Hog-dairy | 114 | 122 | 95 | 121 | 9 | 24 | 67 |
| Hog-beef raising | 113 | 126 | 96 | 122 | 7 | 29 | 64 |
| Hog-beef fattening | 106 | 124 | 96 | 123 | 5 | 58 | 37 |
| Cash grain | 122 | 130 | 97 | 126 | 8 | 13 | 79 |
| Tobacco farms: | | | | | | | |
| Tobacco-livestock (Kentucky) | 121 | 126 | 104 | 122 | 26 | 10 | 64 |
| Tobacco-cotton (North Carolina) | 120 | 126 | 105 | 118 | 38 | 5 | 57 |
| Cotton farms: | | | | | | | |
| Southern Piedmont | 108 | 95 | 101 | 110 | 9 | 12 | 79 |
| Delta of Mississippi | 4/115 | 92 | 5/ 45 | 129 | 28 | 2 | 70 |
| Black Prairie, Texas | 112 | 101 | 97 | 118 | 23 | 11 | 66 |
| High Plains, Texas (nonirrigated) | 107 | 83 | 96 | 118 | 19 | 8 | 73 |
| High Plains, Texas (irrigated) | 105 | 87 | 89 | 115 | 26 | 2 | 72 |
| Spring wheat farms (Northern Plains): | | | | | | | |
| Wheat-corn-livestock | 115 | 107 | 94 | 121 | 10 | 14 | 76 |
| Wheat-small grain-livestock | 115 | 105 | 88 | 119 | 12 | 4 | 84 |
| Wheat-roughage-livestock | 113 | 105 | 80 | 121 | 5 | 11 | 84 |
| Winter wheat farms: | | | | | | | |
| Wheat-pea (Washington and Idaho) | 119 | 124 | 92 | 120 | 13 | 5 | 82 |
| Sheep ranches: | | | | | | | |
| Northern Plains | 117 | 126 | 99 | 125 | 27 | 29 | 44 |
| Cattle ranches: | | | | | | | |
| Northern Plains | 119 | 129 | 104 | 120 | 14 | 13 | 73 |
| Intermountain region | 115 | 137 | 110 | 113 | 13 | 19 | 68 |

---

1/ Preliminary. 2/ Goods and services used in production except interest. 3/ Based on 1954 expenditures. 4/ Revised. 5/ Mules only.

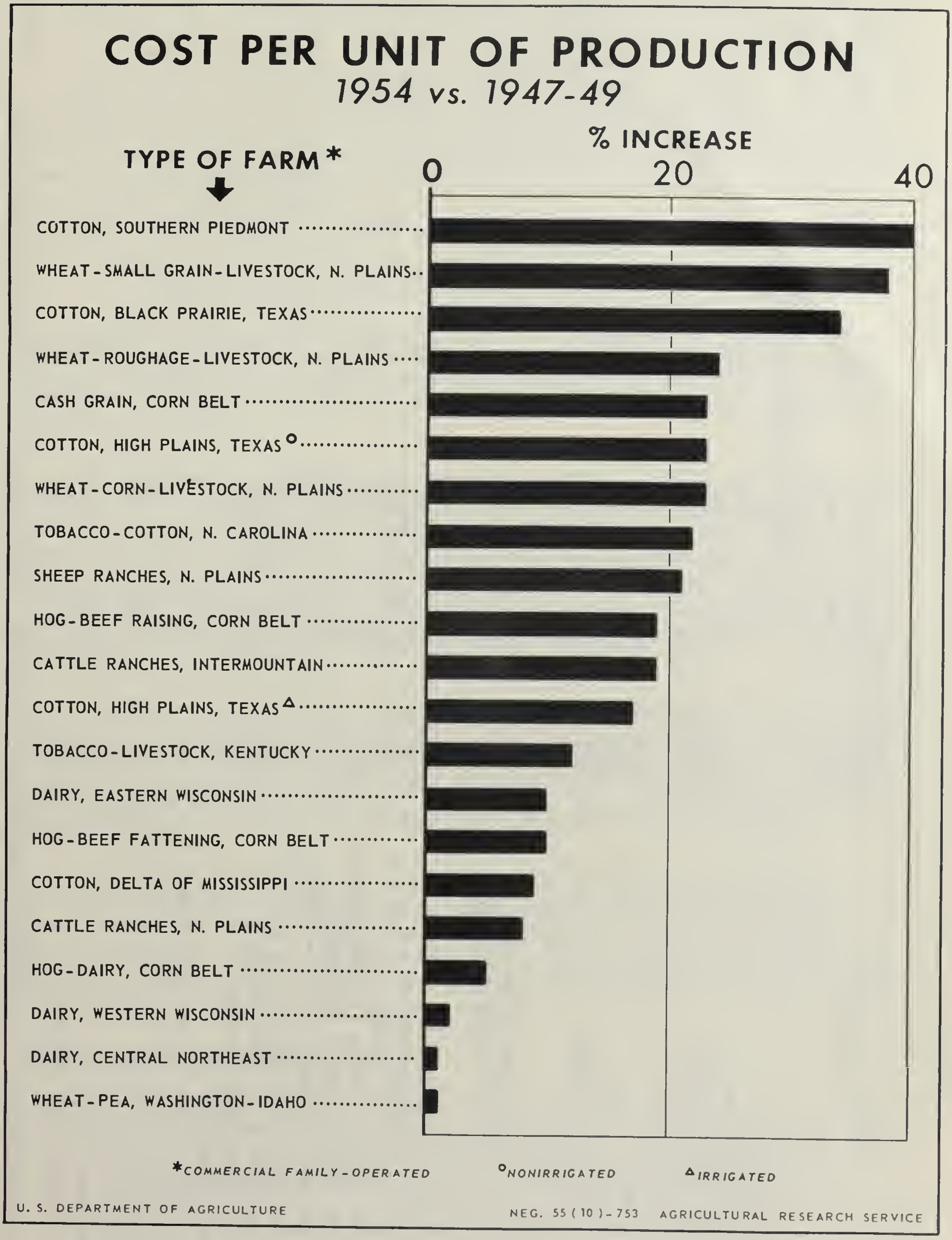
COST PER UNIT OF PRODUCTION
1954 vs. 1947-49
TYPE OF FARM*
% INCREASE
0
20
40
COTTON, SOUTHERN PIEDMONT
WHEAT-SMALL GRAIN-LIVESTOCK, N. PLAINS
COTTON, BLACK PRAIRIE, TEXAS
WHEAT-ROUGHAGE-LIVESTOCK, N. PLAINS
CASH GRAIN, CORN BELT
COTTON, HIGH PLAINS, TEXAS°
WHEAT-CORN-LIVESTOCK, N. PLAINS
TOBACCO-COTTON, N. CAROLINA
SHEEP RANCHES, N. PLAINS
HOG-BEEF RAISING, CORN BELT
CATTLE RANCHES, INTERMOUNTAIN
COTTON, HIGH PLAINS, TEXAS△
TOBACCO-LIVESTOCK, KENTUCKY
DAIRY, EASTERN WISCONSIN
HOG-BEEF FATTENING, CORN BELT
COTTON, DELTA OF MISSISSIPPI
CATTLE RANCHES, N. PLAINS
HOG-DAIRY, CORN BELT
DAIRY, WESTERN WISCONSIN
DAIRY, CENTRAL NORTHEAST
WHEAT-PEA, WASHINGTON-IDAHO
*COMMERCIAL FAMILY-OPERATED
°NONIRRIGATED
△IRRIGATED
U. S. DEPARTMENT OF AGRICULTURE
NEG. 55 (10)-753
AGRICULTURAL RESEARCH SERVICE

Figure 7

Table 12.- Cost of production, and related data, specified types of farms, 1954 1/

| Type of farm and location | Per unit of production: Total cost 2/ | Per unit of production: Operating expense 3/ | Prices and rates paid 4/ | Crop yields | Net farm production | Production: Per hour of labor | Production: Per unit of input |
|---|---|---|---|---|---|---|---|
| | Index numbers (1947-49=100) | | | | | | |
| Dairy farms: | | | | | | | |
| Central Northeast | 101 | 96 | 109 | 113 | 126 | 149 | 115 |
| Eastern Wisconsin | 110 | 117 | 118 | 122 | 110 | 127 | 105 |
| Western Wisconsin | 102 | 110 | 118 | 112 | 119 | 136 | 115 |
| Corn Belt farms: | | | | | | | |
| Hog-dairy | 105 | 104 | 114 | 124 | 124 | 128 | 115 |
| Hog-beef raising | 119 | 120 | 113 | 90 | 107 | 104 | 98 |
| Hog-beef fattening | 110 | 114 | 106 | 110 | 110 | 118 | 102 |
| Cash grain | 123 | 127 | 122 | 112 | 110 | 115 | 102 |
| Tobacco farms: | | | | | | | |
| Tobacco-livestock (Kentucky) | 112 | 114 | 121 | 122 | 116 | 120 | 109 |
| Tobacco-cotton (North Carolina) | 122 | 126 | 120 | 104 | 107 | 113 | 99 |
| Cotton farms: | | | | | | | |
| Southern Piedmont | 140 | 118 | 108 | 85 | 73 | 101 | 85 |
| Delta of Mississippi | 109 | 90 | 5/115 | 96 | 86 | 102 | 96 |
| Black Prairie, Texas | 134 | 120 | 112 | 82 | 82 | 111 | 89 |
| High Plains, Texas (nonirrigated) | 123 | 114 | 107 | 78 | 72 | 109 | 84 |
| High Plains, Texas (irrigated) | 117 | 115 | 105 | 135 | 127 | 112 | 92 |
| Spring wheat farms (Northern Plains): | | | | | | | |
| Wheat-corn-livestock | 123 | 121 | 115 | 95 | 101 | 100 | 90 |
| Wheat-small grain-livestock | 138 | 128 | 115 | 72 | 87 | 86 | 82 |
| Wheat-roughage-livestock | 124 | 125 | 113 | 92 | 103 | 95 | 89 |
| Winter wheat farms: | | | | | | | |
| Wheat-pea (Washington and Idaho) | 101 | 102 | 119 | 139 | 134 | 128 | 118 |
| Sheep ranches: | | | | | | | |
| Northern Plains | 121 | 122 | 117 | 91 | 109 | 100 | 97 |
| Cattle ranches: | | | | | | | |
| Northern Plains | 108 | 118 | 119 | 91 | 113 | 110 | 104 |
| Intermountain region | 119 | 140 | 115 | 92 | 105 | 106 | 93 |

---

1/ Preliminary. 2/ Includes charges for capital and unpaid labor. 3/ Includes property taxes but no interest. 4/ From table 11. 5/ Revised.

19-percent increase in cost rates largely because crop yields increased 39 percent. On northeastern dairy farms, where cost rates increased 9 percent and cost per unit of production increased only 1 percent, crop yields increased 13 percent and net farm production increased 26 percent.

On Southern Piedmont cotton farms, where cost rates increased 8 percent and cost per unit of production increased 40 percent, crop yields declined 15 percent and net farm production fell 27 percent from 1947-49 levels. Dry weather and the restoration of cotton acreage allotments were contributing factors.

## Costs and Returns on 4 Selected Types of Farms in 1955

Net incomes of all farm operators are expected to average lower in 1955 than in 1954, but this is not necessarily true for individual farmers or even for groups of farmers who have been favored this year with better weather and higher crop yields or higher prices for their specific products.

A summary of changes in incomes and costs on 4 types of farms is shown in table 13. Of these 4 types, 3 had higher net incomes in 1955 than in 1954. For wheat and cotton farms, higher net incomes were the result of greatly improved crop yields from the low levels of 1954. On dairy farms in the central Northeast, higher net incomes were due chiefly to higher prices received for milk and lower prices paid for feed. The decline in incomes on hog-dairy farms was due primarily to lower prices for hogs.

These 4 types of farms are not intended to represent a cross-section of all farms in the country. But they do illustrate the effects of different changes in climatic and economic environment on net incomes of selected groups of farmers. In planning for 1956, farmers on each of these and other types of farms will be faced with a different set of circumstances.

In 1955 net incomes on commercial family-operated cotton farms in the Southern Piedmont will be higher than they were in 1947-49. For the other 3 types of farms illustrated, net incomes in 1955 will be lower than in 1947-49. Operating expenses on all 4 types are currently above those of 1947-49. Only on cotton farms and northeastern dairy farms are gross incomes above the 1947-49 average.

### Dairy Farms, Central Northeast

On dairy farms in the central Northeast, net farm incomes in 1955 are expected to be about 5 percent above those of 1954. Both gross incomes and operating expenses are expected to be slightly higher than in 1954, but gross incomes are expected to rise more than expenses.

Net production on these farms will be slightly lower in 1955 than in 1954 largely because of lower hay yields. But production of milk per

Table 13.- Cost and returns, selected types of farms, 1954 and 1955 compared with 1947-49

| Type of farm | Unit | Average 1947-49 | Percent of 1947-49 | |
|---|---|---|---|---|
| | | | 1954 | 1955 1/ |
| Dairy farms, Central Northeast: | | | | |
| Gross farm income | Dollar | 8,822 | 102 | 104 |
| Operating expense | do. | 4,930 | 115 | 116 |
| Net farm income | do. | 3,892 | 85 | 90 |
| Cows, 2 years and over | Number | 21.9 | 113 | 116 |
| Prices paid (1947-49=100) | Percent | 100 | 109 | 109 |
| Net farm production (1947-49=100) | do. | 100 | 126 | 124 |
| Hog-dairy farms, Corn Belt: | | | | |
| Gross farm income | Dollar | 10,191 | 118 | 104 |
| Operating expense | do. | 4,552 | 129 | 131 |
| Net farm income | do. | 5,639 | 110 | 83 |
| Pork produced | 100 pounds | 208.2 | 113 | 118 |
| Prices paid (1947-49=100) | Percent | 100 | 114 | 114 |
| Net farm production (1947-49=100) | do. | 100 | 124 | 128 |
| Cotton farms, Southern Piedmont: | | | | |
| Gross farm income | Dollar | 3,581 | 76 | 100 |
| Operating expense | do. | 2,016 | 86 | 91 |
| Net farm income | do. | 1,565 | 63 | 112 |
| Cotton | Acre | 18.5 | 69 | 62 |
| Other crops | do. | 42.5 | 86 | 87 |
| Prices paid (1947-49=100) | Percent | 100 | 108 | 112 |
| Net farm production (1947-49=100) | do. | 100 | 73 | 101 |
| Wheat-small grain-livestock farms, Northern Plains: | | | | |
| Gross farm income | Dollar | 10,801 | 71 | 95 |
| Operating expense | do. | 4,478 | 115 | 121 |
| Net farm income | do. | 6,323 | 40 | 77 |
| Wheat | Acre | 217 | 77 | 70 |
| Other crops | do. | 185 | 133 | 143 |
| Fallow land | do. | 87 | 119 | 131 |
| Prices paid (1947-49=100) | Percent | 100 | 115 | 116 |
| Net farm production (1947-49=100) | do. | 100 | 87 | 120 |

---

1/ Tentative estimates.

farm will be about 5 percent above 1954. Also, the price received for milk is expected to average about $0.10 per hundredweight above a year earlier.

Although total operating expenses did not change appreciably from 1954 to 1955, some change occurred for individual items. Feed costs were lower because of lower prices. Costs of several other items were higher in 1955, because of higher prices or because of an increase in volume of business. Real estate taxes continued to rise in 1955.

## Hog-Dairy Farms, Corn Belt

Net farm incomes on hog-dairy farms in the Corn Belt are expected to average about $4,700 in 1955, or 24 percent below 1954. Most of the reduction in income is due to a 30-percent drop in the average price received for hogs and smaller declines in prices of corn and butterfat. Net farm production in 1955 averaged about 3 percent above 1954. Operating expenses rose about 2 percent.

Prices paid for goods and services used in production remained unchanged from 1954 to 1955. Because of the increase in net production, costs per unit of production declined about 1 percent. However, the big drop in hog prices and the smaller declines in prices of other products caused prices received for all products to drop about 16 percent. Operating expenses per farm continued to move up largely because of greater livestock production.

## Cotton Farms, Southern Piedmont

If October 15 prices of cotton lint and cottonseed hold for the rest of the year, net farm incomes on Southern Piedmont cotton farms will probably average about $1,750, or about 75 percent above 1954. This large increase in net farm incomes will be due almost entirely to more favorable weather in 1955 than in 1954. The yield of cotton per acre will be the highest on record--414 pounds. The next highest was 345 pounds in 1948. The yield of corn in 1955, 27.5 bushels per acre, also was the highest on record. Although yields in the area have trended upward, because of improved practices such as increased fertilization, better insect control, and improved varieties, there is no evidence in this area of marked changes in practices since controls were reestablished in 1954.

Despite the reduced acreage of cotton in 1955, total production of cotton will be the highest since 1951. Net farm production on these farms was 1 percent above the 1947-49 average and the highest since 1948. Most of the land taken out of cotton in this area since 1953 has remained idle.

Assuming that the October price of cotton holds for the rest of the year, the index of prices received (1947-49=100) will drop from 105 in 1954 to 99 in 1955 while the index of prices paid will increase from 108 to 112.

## Wheat-Small Grain-Livestock Farms, Northern Plains

In 1955, net farm incomes on wheat-small grain-livestock farms are expected to be nearly twice as high as they were in 1954. Most of the increase is due to much higher yields of wheat in 1955. Yields of durum wheat in 1955 averaged 13.0 bushels per acre compared with 3.5 bushels in 1954. Similarly, yields of other spring wheat were 14.1 bushels per acre compared with 8.6 bushels in 1954. Yields of other crops were slightly higher.

Prices received are expected to average about 5 percent lower in 1955 compared with a year earlier. With durum wheat selling above support prices and more durum to sell in 1955, greater receipts from the sale of durum offset to some extent the lower prices for most other commodities. Net production per farm in 1955 will be more than a third above that in 1954. In addition to higher crop yields, farms are slightly larger and livestock production also is larger.

Operating expenses per farm in 1955 will average about 5 percent above 1954, whereas prices paid are expected to rise about 1 percent. Most of the increase in costs results from the larger harvesting and hauling costs that are associated with greater production. Real estate taxes will be higher in 1955, but expenditures for hired labor will be lower because less hired labor was used.

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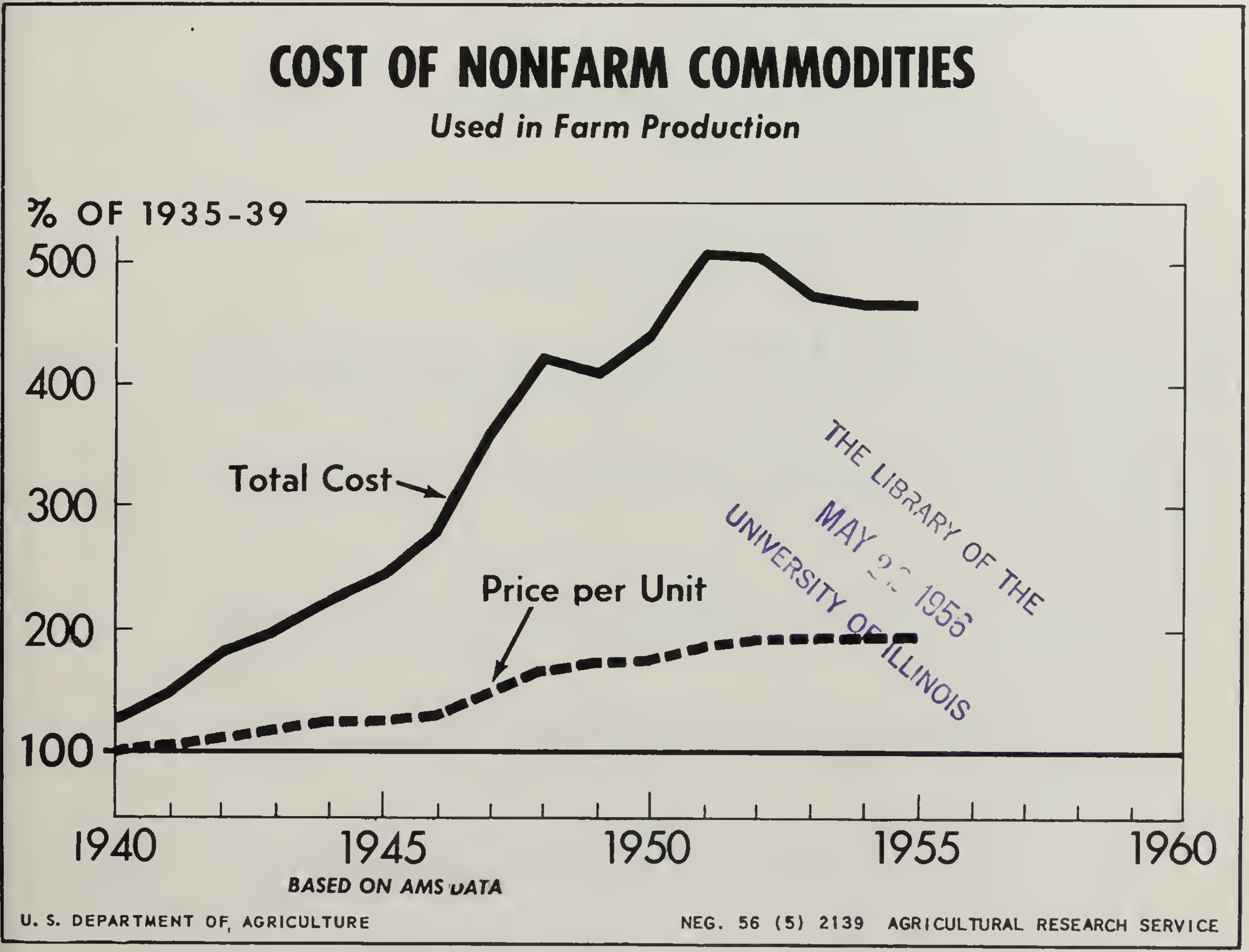
# THE FARM COST SITUATION

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

ARS 43-29 (FCS-20) MAY 1956



## COST OF NONFARM COMMODITIES

Used in Farm Production

BASED ON AMS DATA

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The total cost of nonfarm commodities used in farm production is now nearly 5 times as high as in 1935-39. Prices paid for these items are about twice as high as they were then. Nonfarm commodities include farm machinery, motor vehicles, motor supplies, fertilizer and lime, building and fencing materials, and other farm supplies.

Goods and services used in production: Cost rates and prices paid by farmers, United States

Index numbers (1947-49=100)

| Year or period | Commodities, interest, taxes, and wage rates | Commodities only | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910-14 | 39 | 42 | 43 | 29 | --- | --- | 42 | 42 | 34 | 70 | 41 | 23 |
| 1915-19 | 59 | 63 | 68 | 44 | --- | --- | 54 | 70 | 48 | 101 | 62 | 34 |
| 1920-24 | 65 | 61 | 60 | 33 | --- | --- | 65 | 77 | 57 | 101 | 60 | 42 |
| 1925-29 | 65 | 61 | 58 | 44 | 94 | 49 | 64 | 73 | 54 | 92 | 60 | 43 |
| 1930-34 | 50 | 47 | 39 | 25 | 74 | 49 | 61 | 61 | 47 | 75 | 40 | 28 |
| 1935-39 | 49 | 52 | 45 | 36 | 74 | 56 | 64 | 60 | 49 | 71 | 49 | 28 |
| 1940 | 49 | 52 | 43 | 41 | 71 | 56 | 64 | 62 | 49 | 69 | 42 | 30 |
| 1941 | 53 | 55 | 47 | 46 | 74 | 59 | 65 | 66 | 53 | 69 | 40 | 35 |
| 1942 | 60 | 62 | 57 | 54 | 79 | 64 | 69 | 73 | 58 | 76 | 54 | 46 |
| 1943 | 68 | 69 | 68 | 61 | 81 | 67 | 71 | 82 | 60 | 81 | 68 | 61 |
| 1944 | 73 | 73 | 75 | 58 | 82 | 73 | 73 | 86 | 64 | 83 | 77 | 74 |
| 1945 | 77 | 74 | 74 | 63 | 82 | 75 | 74 | 87 | 66 | 84 | 79 | 83 |
| 1946 | 83 | 81 | 87 | 72 | 84 | 77 | 76 | 88 | 72 | 85 | 81 | 90 |
| 1947 | 95 | 95 | 102 | 90 | 92 | 90 | 86 | 95 | 93 | 93 | 93 | 97 |
| 1948 | 104 | 105 | 109 | 111 | 103 | 100 | 101 | 100 | 104 | 102 | 109 | 103 |
| 1949 | 101 | 100 | 89 | 99 | 105 | 110 | 113 | 105 | 103 | 105 | 98 | 100 |
| 1950 | 104 | 104 | 91 | 116 | 106 | 110 | 115 | 105 | 105 | 101 | 94 | 99 |
| 1951 | 115 | 115 | 102 | 141 | 111 | 118 | 124 | 112 | 117 | 106 | 96 | 109 |
| 1952 | 117 | 116 | 109 | 118 | 112 | 123 | 129 | 119 | 118 | 109 | 109 | 117 |
| 1953 | 112 | 106 | 98 | 83 | 114 | 122 | 130 | 120 | 118 | 110 | 100 | 119 |
| 1954 | 112 | 106 | 98 | 85 | 116 | 123 | 131 | 117 | 119 | 108 | 93 | 119 |
| 1955 | 112 | 105 | 92 | 84 | 116 | 126 | 132 | 114 | 122 | 107 | 102 | 120 |
| Jan. | 114 | 107 | 97 | 88 | --- | 124 | --- | --- | --- | --- | --- | 121 |
| Feb. | 114 | 108 | 97 | 89 | --- | --- | --- | --- | --- | --- | 105 | --- |
| Mar. | 115 | 108 | 96 | 92 | 116 | 125 | 131 | 115 | 120 | --- | 104 | --- |
| Apr. | 114 | 107 | 95 | 91 | --- | --- | --- | 115 | --- | 107 | 104 | 120 |
| May | 113 | 106 | 94 | 84 | --- | --- | --- | --- | --- | --- | 104 | --- |
| June | 113 | 105 | 93 | 85 | 116 | 125 | 132 | 113 | 121 | --- | --- | --- |
| July | 112 | 105 | 91 | 81 | --- | 124 | --- | --- | --- | --- | --- | 119 |
| Aug. | 111 | 104 | 89 | 80 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 111 | 104 | 87 | 81 | 116 | 126 | 134 | 113 | 123 | 106 | 94 | --- |
| Oct. | 111 | 104 | 87 | 82 | --- | --- | --- | --- | --- | --- | --- | 120 |
| Nov. | 111 | 103 | 86 | 77 | --- | 129 | --- | --- | --- | --- | --- | --- |
| Dec. | 111 | 103 | 87 | 72 | 116 | 130 | 135 | 114 | 124 | --- | --- | --- |
| 1956 | | | | | | | | | | | | |
| Jan. | 112 | 104 | 87 | 78 | --- | 129 | --- | --- | --- | --- | --- | 121 |
| Feb. | 112 | 103 | 87 | 78 | --- | --- | --- | --- | --- | --- | 85 | --- |
| Mar. | 112 | 104 | 87 | 79 | 117 | 130 | 136 | 117 | 125 | --- | 85 | --- |
| Apr. | 114 | 105 | 88 | 81 | --- | --- | --- | 117 | --- | 105 | 86 | 125 |

Agricultural Marketing Service.

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# THE FARM COST SITUATION

Approved by the Outlook and Situation Board, May 8, 1956

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## GENERAL SITUATION

Prices and cost rates paid by farmers for goods and services used in production average about the same this spring as they did a year ago. Prices paid for industrial commodities in general, farm wage rates, and taxes are higher while prices paid for feed, seed and livestock are lower. However, prices paid for production items that originate on farms have increased somewhat in recent months.

How cost rates this spring compare with those of a year ago follow:

| | | |
|---|---|---|
| Farm real estate taxes per acre | Up 6 | percent |
| Motor vehicle prices (March 15) | Up 5 | " |
| Wage rates (April 1) | Up 4 | " |
| Building and fencing materials (March 15) | Up 4 | " |
| Farm machinery prices (March 15) | Up 4 | " |
| Farm real estate prices (March 1) | Up 3 | " |
| Farm supplies (March 15) | Up 1 | " |
| Motor supplies (March 15) | Up 1 | " |
| Fertilizer (April 15) | Down 2 | " |
| Feed (April 15) | Down 7 | " |
| Feeder livestock (April 15) | Down 11 | " |
| Seed (April 15) | Down 18 | " |

Although prices paid for feed, seed, and livestock have declined while prices paid for industrial items have increased in recent years, the relationship between these two groups of prices is similar to the relationship between them before World War II.

## Cost-Price Relationship

The relationship between farm production cost rates and prices received by farmers is somewhat less favorable to farmers this spring than it was a year ago. Record crop yields in 1955, heavy marketings of both cattle and hogs, and further accumulation of surplus stocks have all contributed to the downward pressure on farm commodity prices during the past year. However, the situation has improved slightly since December.

## Production Expenses

Production expenses of U. S. farm operators were about 1 percent higher in 1955 than in 1954. Farm mortgage interest payments were up 9 percent whereas livestock purchases, farm real-estate taxes, and depreciation charges on capital items were up 6, 5, and 4 percent, respectively. About three-fourths of the total increase in these 4 items was offset by a 6-percent decline in expenditures for feed which resulted chiefly from a substantial drop in prices of feed grains.

## Present and Prewar Cost Situations Compared

Since 1940 all major categories of farm operators' production expenses have increased although at different rates (fig. 1). The overall advance has been from about $6.7 billion in 1940 to about $22.4 billion in 1955, an increase of about 232 percent. Depreciation charges on capital items, including machinery and buildings, have increased the most, about 400 percent. Farm mortgage interest payments, on the other hand, have increased the least, only 40 percent.

Changes in cost rates and prices paid by farmers for goods and services used in production during this period (fig. 2) explain only part of the changes in farmers' production expenses. For example, despite a 35-percent increase in farm output and a 300-percent increase in farm wage rates, total wages paid to farm workers increased only 203 percent. And, although prices paid for fertilizer and lime increased 55 and 22 percent, respectively, total expenditures for fertilizer and lime increased nearly 300 percent.

Revolutionary changes in farming methods have greatly changed the use of various resources. The number of hired workers has declined about 29 percent but the total use of plant nutrients has increased about 270 percent. A given level of farm output is now produced on fewer farms, with less land, fewer workers, and fewer work animals but with considerably more machinery and fertilizer (fig. 3). Many other improved practices have been adopted also.

Farmers depend a great deal more on nonfarm goods and services than they did formerly. Since 1940 they have tended to increase their use of the input factors that have gone up the least in price, such as fertilizer, and to reduce their use of the inputs that have gone up the most, such as hired labor. By making these changes, individual farmers have been able to increase their net returns over what they would have been otherwise. In the process, they have increased total output substantially, but they have also increased their total cash outlay.

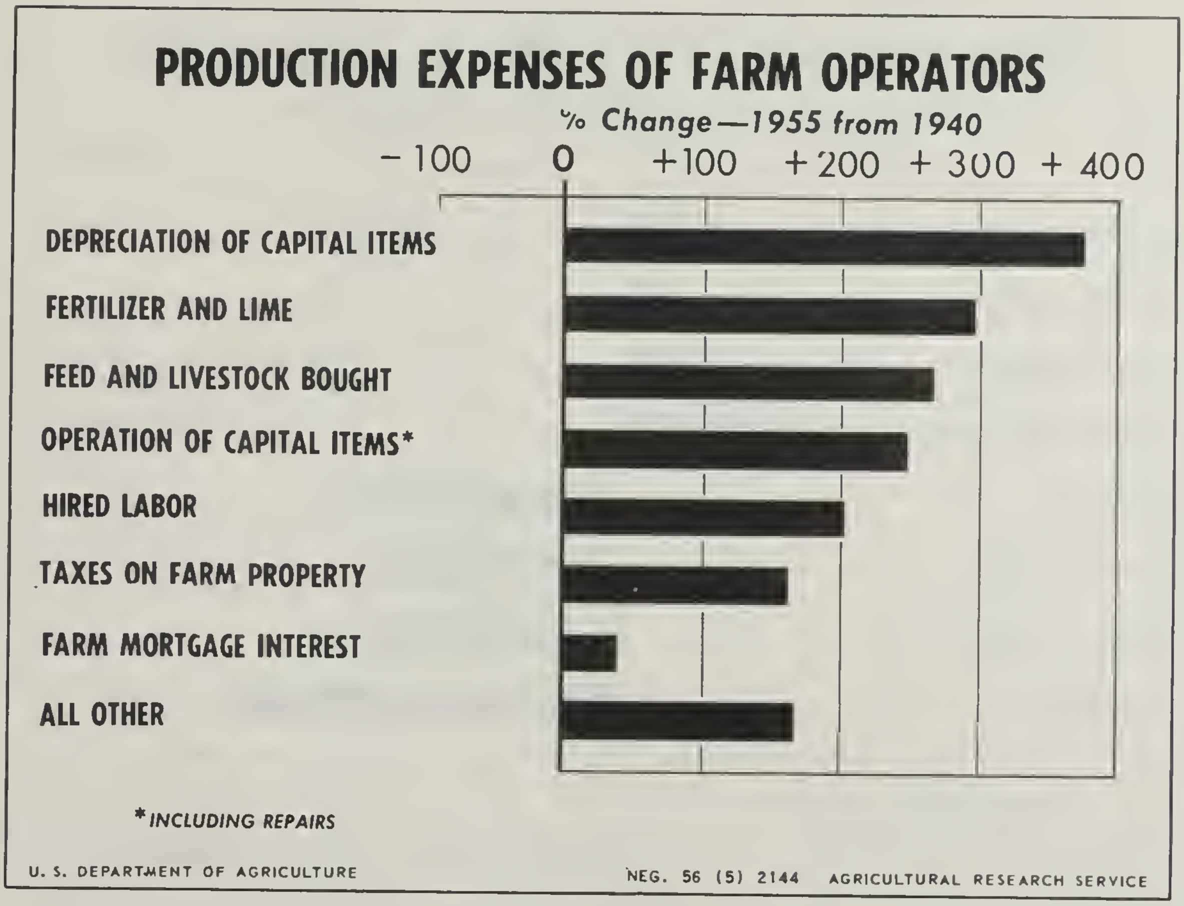

Figure 1

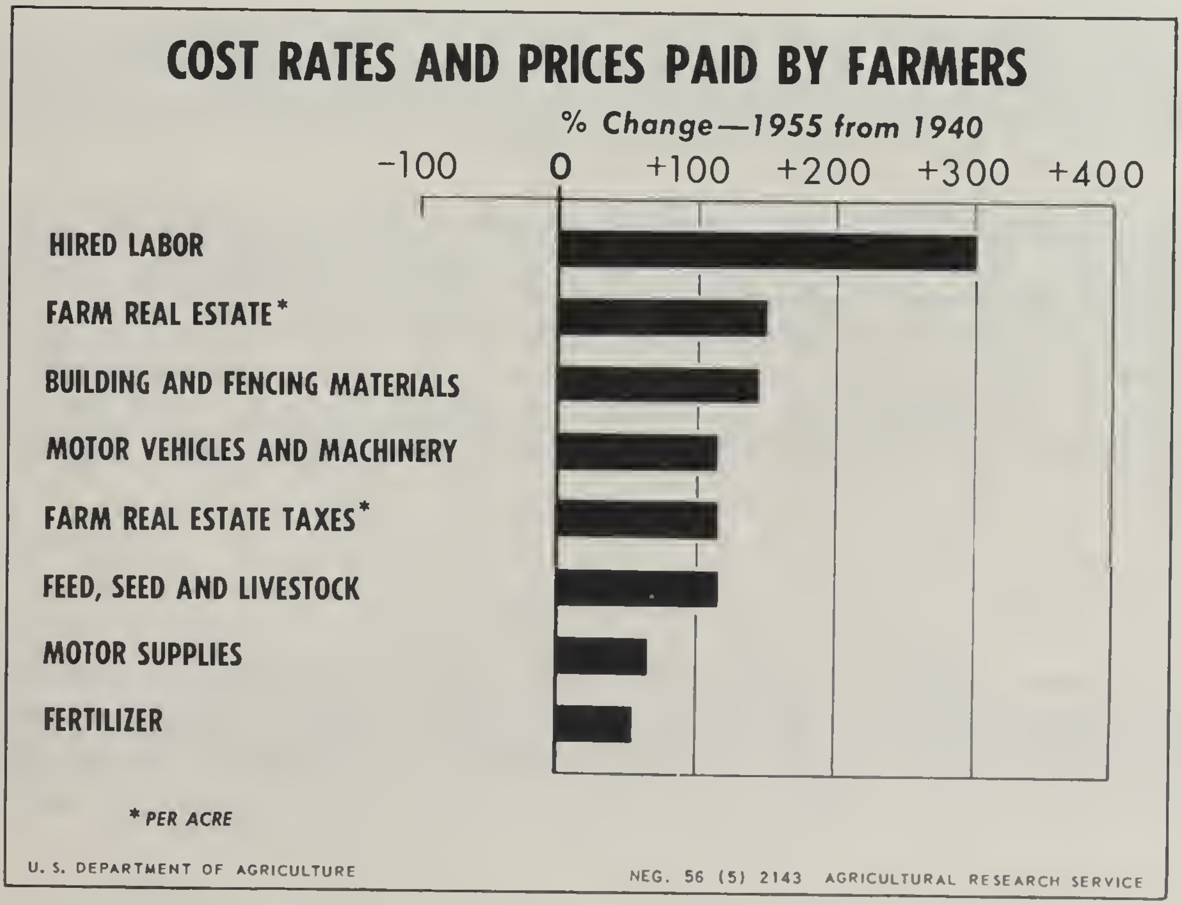

Figure 2

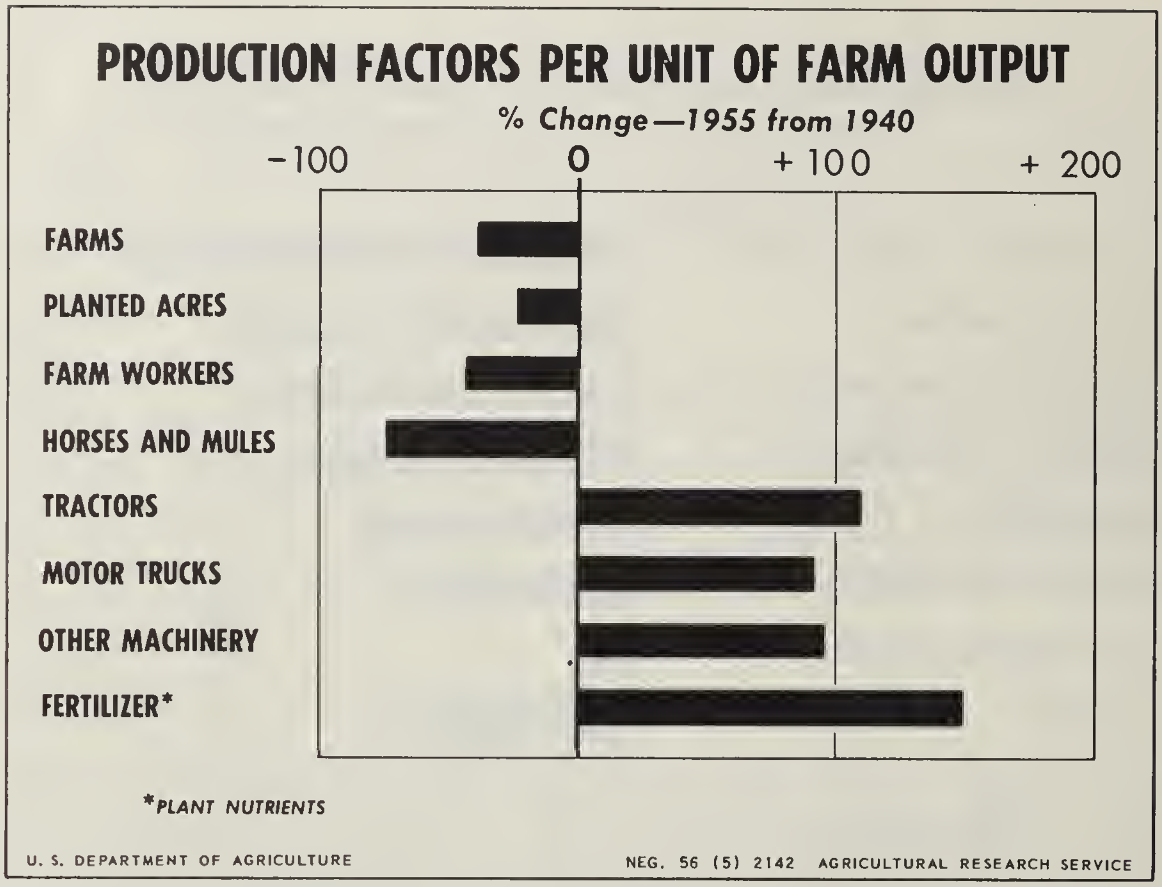

Figure 3

New Technology

Farmers are still adjusting to changes in farm cost rates and to new technology. Some of the more recent developments, including the increased use of nitrogen fertilizer, bulk milk tanks, and medicated feeds, are discussed in greater detail later in this issue.

The combined effect of these and other changes on costs of production on 23 important types of farms since 1947-49 is also presented. Apparently on some types of farms, increased operating efficiency has kept cost per unit of production from increasing as fast as the index of prices paid. On other types of farms, this has not been the case. Less favorable weather in some areas and substantial increases in capital charges generally have tended to offset the effects of more efficient methods on unit costs of production.

## FARM LABOR

Farm wage rates are higher this spring than they were a year ago in all parts of the country. On April 1, 1956, the United States average was 4.3 percent higher than a year earlier (table 1). The greatest increases

Table 1.- Average farm wage rates, April 1, 1956, compared with rates on April 1, 1955, by regions

| Region | Average wage rates, April 1, 1956 1/ With board and room, per month | Without board or room Per day | Without board or room Per hour | Increases, 1955 to 1956 |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Percent |
| New England | 130 | 8.40 | 1.08 | 4.9 |
| Middle Atlantic | 125 | 7.90 | 1.01 | 4.7 |
| East North Central | 124 | 7.80 | 1.03 | 4.5 |
| West North Central | 125 | 7.90 | .99 | 1.5 |
| South Atlantic | 2/ | 5.10 | .68 | 3.1 |
| East South Central | 2/ | 4.15 | .57 | 6.4 |
| West South Central | 2/ | 5.40 | .67 | 5.5 |
| Mountain | 155 | 7.90 | .96 | 4.5 |
| Pacific | 190 | 2/ | 1.11 | 3.4 |
| United States | 123 | 5.40 | .89 | 4.3 |

1/ Selected from 9 types of rates for which averages are reported.
2/ Relatively unimportant in this region.

From the monthly report "Farm Labor," prepared by the Agricultural Marketing Service, U. S. Department of Agriculture.

occurred in the East and West South Central Regions where rates were 6.4 and 5.5 percent higher, respectively. Average wage rates for the country as a whole on April 1, 1956, were: $123 per month with board and room, and $5.40 per day and 89 cents per hour without board and room.

Generally higher wage rates in industry and the relative ease of obtaining nonagricultural employment are prime factors in higher farm wage rates this year. The new minimum wage of $1.00 per hour, applicable to most industrial jobs, that become effective March 1, 1956, may also have had some indirect effect.

The supply of experienced year-round farmworkers continues tight. Workers from foreign sources will be available again this year for seasonal farmwork in areas certified as having an insufficient supply of workers from domestic sources. On March 15, 1956, about 71,000 foreign workers, mostly Mexican Nationals, were working on farms in this country, according to reports of the Bureau of Employment Security, United States Department of Labor. This number compares with about 64,000 on the same date in 1955.

In total, more than 410,000 workers from Mexico, British West Indies, and Canada were brought in at various times for seasonal jobs last year. This was an increase of more than a fourth from 1954. Many of the additional

Mexican Nationals contracted in the last few years replaced those that entered illegally in previous years. Rigid control to prevent illegal entry is being maintained. Of those brought in last year, the greatest number were employed late in October when about 240,000 were working on farms. At that time, they constituted approximately 9.5 percent of all hired farm workers.

## FARM POWER AND MACHINERY

Dealers' list prices of farm machines and equipment are now more than double the prewar prices. Most of the increases in price had occurred before the outbreak of hostilities in Korea in June 1950, but there were rather substantial increases in the last half of 1950. From January 1, 1951, to September 1955, prices of machinery showed little change. In the last quarter of 1955, manufacturers of farm machinery increased prices to dealers by about 4 percent and there have been similar increases in dealers' list prices.

Although dealers' list prices of farm machines and equipment are now higher than for any previous year, many dealers are continuing the practice of recent years of allowing more than the market value for trade-ins and by giving discounts for cash sales.

Farmers' purchases of new machines and equipment have been of large volume for more than a decade. Substantial numbers of these purchases were made to replace animal power and animal-drawn machines. With the power machines and equipment, work capacity was increased greatly and there have been substantial reductions in the number of farmers and in the farm labor force.

Numbers of wheel tractors on farms are now about 3 times the 1940 figure (table 2). The increase since 1940 has been relatively larger for grain combines, mechanical field type cornpickers, milking machines, pickup balers, and many other important machines, than for farm tractors.

Along with the increase in numbers of machines the trend in recent years has been toward use of larger tractors and equipment. Many farmers have found that the larger equipment permits substantial savings in labor, adds to timeliness in work performance, and often contributes toward lower costs of production. Reports of the Census of Manufacturers show that the bulk of the wheel tractors sold for farm use now have ratings of 35 belt h.p. or more. A decade earlier, most of the tractors sold had ratings of less than 30 belt h.p.

Although many farmers bought new tractors, machines, and equipment in recent years, a substantial number of them have found it necessary to delay their purchases because of limited incomes. This group of farmers continues to use relatively old and often obsolete equipment, or they buy used machines and equipment. Some have made increased use of custom machines. In fact, some farmers with relatively small acreages in crops find it less expensive to hire custom operators to perform most of their fieldwork than to own the machines.

Table 2.- Farm power and machinery and related data, United States, 1940-55

Index numbers (1947-49=100)

| Year | Number on farms, January 1 1/ | | | | | | Volume on farms, January 1 2/ | |
|---|---|---|---|---|---|---|---|---|
| | Horses and mules all ages | Work-stock 3 years old and over | Colts under 1 year of age | Tractors 3/ | Auto-mobiles | Motor-trucks | All machinery and equipment other than tractors and other motor vehicles | All farm power (including work animals), machinery and equipment |
| 1940 | 156 | 144 | 324 | 54 | 97 | 55 | 61 | 81 |
| 1941 | 152 | 140 | 314 | 58 | 101 | 58 | 62 | 83 |
| 1942 | 147 | 136 | 272 | 65 | 109 | 61 | 68 | 87 |
| 1943 | 142 | 134 | 221 | 72 | 101 | 68 | 70 | 88 |
| 1944 | 136 | 130 | 198 | 76 | 98 | 73 | 68 | 87 |
| 1945 | 128 | 125 | 172 | 83 | 97 | 79 | 73 | 89 |
| 1946 | 119 | 117 | 133 | 87 | 99 | 82 | 81 | 92 |
| 1947 | 109 | 108 | 112 | 92 | 101 | 90 | 85 | 93 |
| 1948 | 100 | 100 | 100 | 99 | 99 | 101 | 99 | 99 |
| 1949 | 91 | 92 | 88 | 109 | 100 | 109 | 116 | 108 |
| 1950 | 84 | 85 | 74 | 119 | 98 | 117 | 130 | 114 |
| 1951 | 76 | 77 | 62 | 129 | 98 | 122 | 141 | 120 |
| 1952 | 66 | 67 | 54 | 137 | 99 | 128 | 153 | 125 |
| 1953 | 58 | 59 | 49 | 144 | 99 | 133 | 160 | 128 |
| 1954 | 51 | 52 | 46 | 149 | 99 | 138 | 162 | 129 |
| 1955 | 46 | 47 | 43 | 152 | 99 | 143 | 161 | 129 |
| 1956 4/ | 43 | 43 | 43 | 156 | | | | |

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1/ The 1947-49 average for horses and mules of all ages was 9,302,000; for workstock, 8,492,000; for colts, 233,000; for tractors, 2,852,000; for automobiles, 4,288,000; and for motortrucks, 1,888,000.

2/ In terms of 1935-39 prices.

3/ Excludes garden tractors.

4/ Preliminary.

Retail prices of motor supplies, including chiefly motor fuel, lubricants, and tires are now about the same as a year earlier. However, beginning with this year farmers can obtain a federal tax rebate of 2 cents a gallon for off-highway uses of gasoline. It is estimated that the rebate will approximate $60 million a year.

## FEED

Prices paid by farmers for feed and prices received by farmers for feed grains and hay were down 7 percent in April from a year earlier (table 3). For the next few months, prices of feed may not average greatly different from those of a year ago.

Returns per $1.00 of feed cost were higher in mid-April than they were a year earlier for milk, butterfat, eggs and turkeys and were lower for hogs, broilers, sheep, and beef cattle (table 4). Returns from feeding cattle bought in the last half of 1955 are expected to be above the returns from those purchased a year earlier. Returns per $1.00 of feed cost were average or above in April 1956 for only 3 of 9 livestock and poultry enterprises. The index of prices of all livestock and livestock products on April 15 was down about 6 percent from a year earlier. Prices were lower for all livestock and livestock products, except dairy products, eggs, and turkeys. Percentagewise, the drop was greatest for broilers and hogs. The price of wool also declined considerably but this will be more than offset by Government payments later this year on the 1955 wool clip.

The supply of feed grains for the 1955-56 feeding year was 8 percent above a year earlier--more than ample for all current needs. Stocks of feed grains on January 1, 1956, were 7 percent larger than on January 1, 1955. The carryover next fall probably will be a little larger than the record stocks of a year earlier.

In total, there are around 3 to 4 percent more grain-consuming livestock in the current feeding year, which began October 1, 1955. Compared with a year earlier, on January 1, 1956, the number of milk cows was down less than 1 percent; that of cattle on feed was up less than 1 percent; that of other beef cattle was up 2 percent; the number of hens and pullets on farms was down 2 percent; and the number of horses and mules was down 8 percent. The number of cattle on feed on April 1 in 14 principal States was 8 percent below a year ago. It is expected that broiler production may be up 20 percent and turkeys raised may be up 10 percent in 1956 compared with 1955. More of the heavy breed turkeys are expected and fewer of the light breed turkeys. Farm chickens for replacement may be up from 5 to 8 percent. The fall pig crop of 1955 was 12 percent above a year earlier, but it is expected that the spring pig crop of 1956 may be down 5 percent from a year earlier.

The supply of hay on January 1, 1956, estimated at 74 million tons, was about 2 percent larger than a year earlier, and the number of roughage-consuming animals was about the same. Numbers of these animals have

Table 3.- Average prices of feed in the United States, April 15, 1956, with comparisons

| Item and unit | April 15, 1954 | April 15, 1955 | October 15, 1955 | April 15, 1956 |
|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars |
| Prices received by farmers: | | | | |
| Corn, per bu. | 1.45 | 1.36 | 1.14 | 1.32 |
| Oats, per bu. | .78 | .73 | .59 | .62 |
| Barley, per bu. | 1.10 | 1.07 | .91 | .95 |
| Sorghum grain, per 100 lbs. | 2.43 | 2.23 | 1.63 | 1.93 |
| Hay, baled, per ton | 22.80 | 22.40 | 20.50 | 21.00 |
| Prices paid by farmers: | | | | |
| Mixed dairy feed 16 pct. protein, per 100 lbs. | 4.01 | 3.79 | 3.58 | 3.62 |
| Laying mash, per 100 lbs. | 5.01 | 4.70 | 4.47 | 4.42 |
| Broiler mash, per 100 lbs. | 5.41 | 5.13 | 4.88 | 4.91 |
| Cottonseed meal, per 100 lbs. | 4.28 | 4.26 | 3.81 | 3.65 |
| Soybean meal, per 100 lbs. | 5.53 | 4.49 | 4.32 | 3.92 |
| Linseed meal, per 100 lbs. | 5.01 | 4.56 | 4.47 | 4.16 |
| Meat scrap, per 100 lbs. | 5.98 | 5.11 | 4.98 | 4.45 |
| Bran, per 100 lbs. | 3.51 | 3.08 | 2.87 | 3.02 |
| Middlings, per 100 lbs. | 3.59 | 3.24 | 3.05 | 3.10 |
| Alfalfa hay, baled, per ton | 35.10 | 35.40 | 32.60 | 32.50 |
| Average value of concentrate ration fed to poultry and milk cows: 1/ | | | | |
| Fed to poultry, per 100 lbs. | 3.93 | 3.73 | 3.44 | 3.51 |
| Fed to milk cows, in milk-selling areas, per 100 lbs. | 3.44 | 3.27 | 3.04 | 3.05 |
| Fed to milk cows in cream-selling areas, per 100 lbs. | 3.04 | 2.87 | 2.65 | 2.67 |
| | Index numbers (1947-49=100) | | | |
| Prices received by farmers for feed grains and hay | 90 | 86 | 73 | 80 |
| Prices paid by farmers for feed | 100 | 95 | 87 | 88 |

1/ Value of the corn, oats, oilmeal, millfeed, commercial mixed feed, etc., that make up 100 pounds of "grain" ration.

Agricultural Marketing Service.

Table 4.- Returns per $1.00 of feed cost for livestock enterprises, United States, April 15, 1956, with comparisons 1/

| Livestock enterprise or product | 1937-51 average April | April 15, 1954 | April 15, 1955 | October 15, 1955 | April 15, 1956 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 1.48 | 1.27 | 1.37 | 1.78 | 1.57 |
| Broilers | 1.63 | 1.38 | 1.84 | 1.53 | 1.39 |
| Turkeys | 1.75 | 1.77 | 1.68 | 1.93 | 1.85 |
| Milk | 1.83 | 1.58 | 1.67 | 2.10 | 1.83 |
| Butterfat | 1.49 | 1.19 | 1.25 | 1.39 | 1.36 |
| Hogs | 1.57 | 2.20 | 1.50 | 1.54 | 1.34 |
| Sheep raising | 1.60 | 1.46 | 1.33 | 1.28 | 1.28 |
| Beef raising | 1.76 | 1.51 | 1.55 | 1.60 | 1.46 |
| Cattle feeding | 2/1.25 | 1953-54<br>1.46 | 1954-55<br>1.19 | | 1955-56<br>3/ |
| | Index numbers (1937-51=100) | | | | |
| Eggs | 100 | 86 | 93 | 85 | 106 |
| Broilers | 100 | 85 | 113 | 94 | 85 |
| Turkeys | 100 | 101 | 96 | 104 | 106 |
| Milk | 100 | 86 | 91 | 93 | 100 |
| Butterfat | 100 | 80 | 84 | 79 | 91 |
| Hogs | 100 | 140 | 96 | 88 | 85 |
| Sheep raising | 100 | 91 | 83 | 76 | 80 |
| Beef raising | 100 | 86 | 88 | 88 | 83 |
| Cattle feeding | 100 | 1953-54<br>117 | 1954-55<br>95 | | 1955-56<br>3/ |

1/ Quantities of feed used in calculating the cost of feed follow: Per dozen eggs - 7 lbs. poultry ration; per lb. of broiler - 4-1/2 lbs. chick starter, 3 lbs. broiler mash, 1952-56; per lb. of turkey - 4-3/4 lbs. poultry ration, 1950-56; per 100 lbs. of hogs - 7-1/2 bu. corn plus 20 lbs. soybean meal; per 100 lbs. of milk - 31 lbs. concentrate ration fed to milk cows in milk-selling areas plus the value of 110 lbs. hay; per lb. of butterfat - 7-1/2 lbs. concentrate ration fed to milk cows in cream-selling areas plus the value of 27-1/2 lbs. hay in Minnesota and Iowa; per 100 lbs. of beef cattle - 3 bu. corn plus 600 lbs. hay; per 100 lbs. of sheep and lambs - 2 bu. corn plus 1,500 lbs. hay. Assumed 19 lbs. wool produced for each 100 lbs. sheep and lamb produced. The quantity of hay for milk cows, beef cattle, and sheep includes an allowance for silage and pasture. Feed nutrients from pasture assumed to cost one-fourth as much as nutrients from hay. Cattle feeding returns are based on table 1, Livestock and Meat Situation, A.M.S., August 15, 1955, which is based on Corn Belt experience.

2/ 1920-52 average.

3/ Season not completed.

increased for several years, but they are still below the 3 previous peaks reached in 1919, 1934, and 1944. The disappearance of hay up to January 1 was about average per animal unit, but larger than a year ago. In most of the Southern States, stocks of hay were larger than last year and more nearly average.

## SEED

The index of prices paid by farmers for seed was 18 percent lower in mid-April than a year earlier. Only two seeds--crested wheatgrass and smooth brome--are significantly higher in price this year than last.

Supplies for seeding this spring relative to average requirements are largest for alfalfa, ryegrass, Sudangrass, lespedeza, tall fescue, timothy, and Kentucky bluegrass. In shortest supply relative to average requirements are redtop, sweetclover, crested wheatgrass, white clover, and smooth brome.

## FERTILIZER

The index of prices paid by farmers for fertilizer declined 2 percent in the year ended April 15. It is now about 3 percent below the 1953 peak, 5 percent above the 1947-49 level, and 48 percent above the 1935-39 level.

Fertilizer prices have advanced more slowly than other cost rates in the last 20 years. This is especially true of the newer nitrogen fertilizers. A pound of nitrogen in the form of anhydrous ammonia, for example, costs less today than nitrogen in the form of nitrate of soda did in 1935-39 (fig. 4). The price of land, on the other hand, has gone up 150 percent while cost rates in general and prices of farm products have more than doubled since the period 1935-39. Various other materials that are derived from anhydrous ammonia such as ammonium nitrate, urea, and nitrogen solutions are also relatively cheap sources of nitrogen, and in some instances may be cheaper than anhydrous ammonia when differences in cost of application are taken into account. (For more information on the place of nitrogen in farming today, see page 28.)

Farmers are using about 3½ times as many tons of plant nutrients as they used in 1940. Fertilizer shipments in the year ended June 30, 1955, contained 4.7 times as much nitrogen (N), 2.5 times as much available phosphate ($P_2O_5$), and 4.2 times as much potash ($K_2O$) as were present in fertilizers shipped in 1939-40 (fig. 5). In the last few years the quantity of nitrogen and potash used by farmers has continued to increase but the quantity of available phosphate has declined slightly.

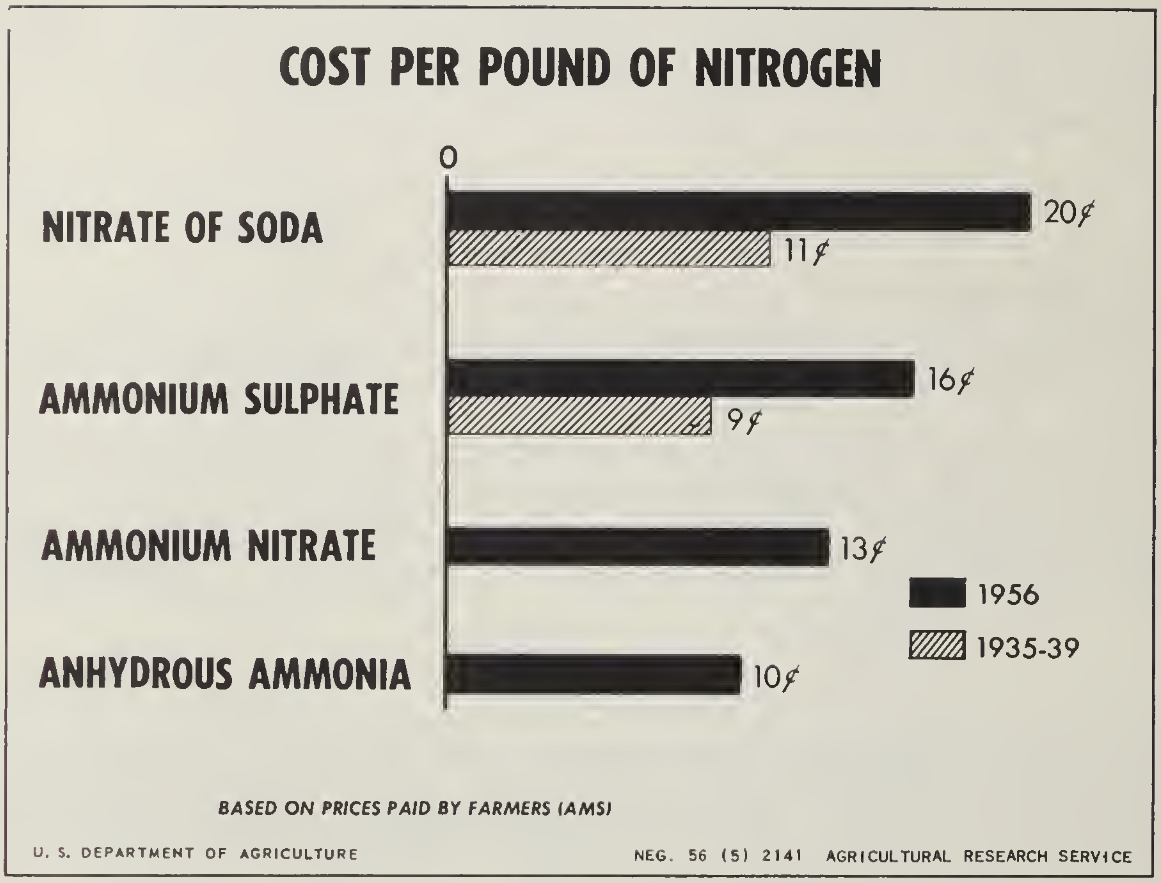


Figure 4

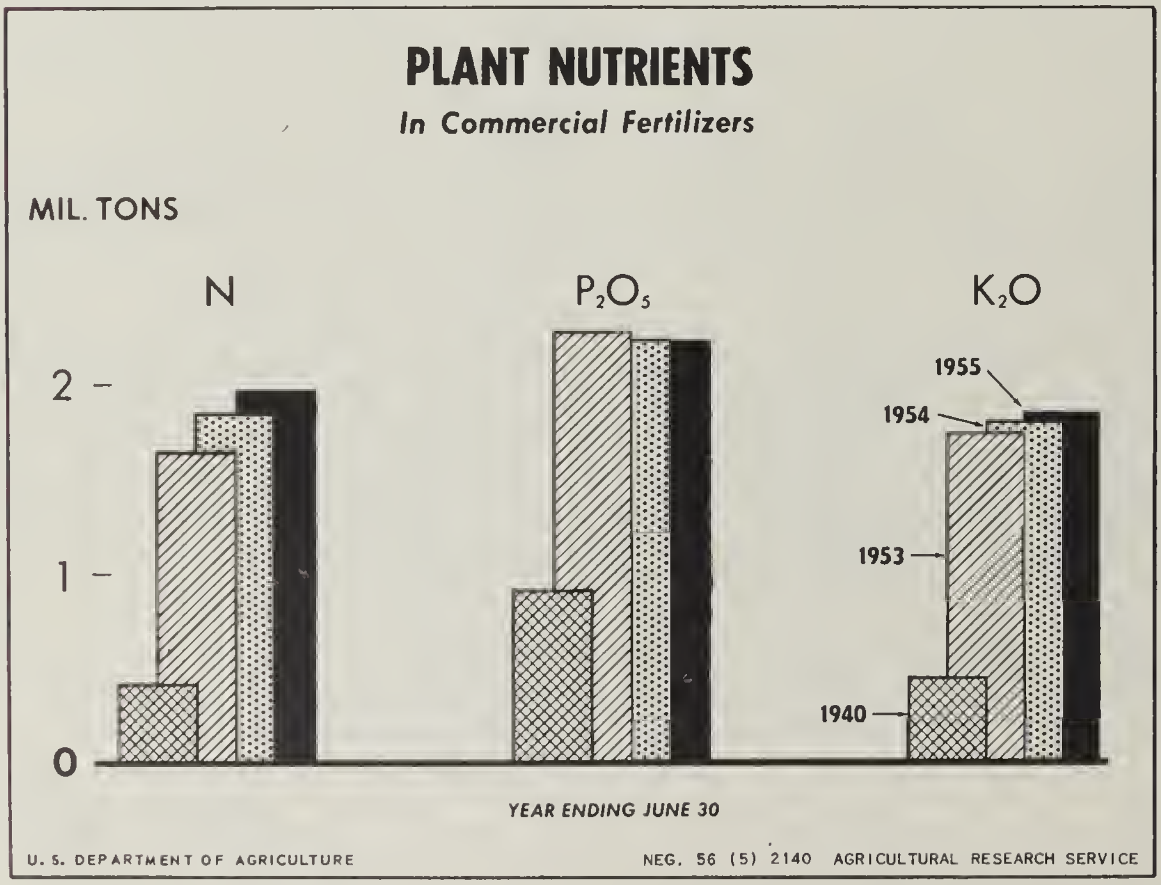


Figure 5

## BUILDING MATERIALS

Prices paid by farmers for building and fencing materials were 4 percent higher in mid-March than a year earlier. Increases in the price of lumber ranged from $2 to $9 per 1,000 board feed. Cement advanced 7 cents a bag, and barbed wire 50 cents a spool.

Prices paid by farmers for building and fencing materials on March 15 were about 22 percent above the average for 1947-49 and 155 percent above the average for 1935-39.

## FARM SUPPLIES

Prices paid by farmers for farm supplies in mid-March were about 1 percent higher this spring than they were a year ago. They are 17 percent above the 1947-49 average and 96 percent above the 1935-39 average.

Among the important items in this particular category of cost factors are baler twine and wire, binder twine, bale ties, and containers. Most purchases of these items are made later in the year and for that reason the Department does not attempt to get information on prices paid for all of these items on the March 15 schedule. Prices of bushel baskets were 4 percent higher and prices of hoes were 5 percent higher in mid-March than a year earlier.

## PESTICIDES

Prices of several important pesticides are slightly lower than they were last fall or a year ago. Manufacturers' prices of benzene hexachloride, DDT, calcium arsenate, 2,4-D and 2,4,5-T are all lower. An important exception is the increase of about 60 percent in the price of copper sulfate.

Demand for pesticides may be strong during 1956 because of the high rate of survival of hibernating boll weevils in the Cotton Belt. Surveys in North Carolina, South Carolina, Georgia, and Louisiana indicate at least twice as many surviving weevils this spring as a year ago. In some counties, the survival rate was 6 or 7 times as high as last year.

An amendment to the Food, Drug and Cosmetics Act is likely to promote the use of materials such as pyrethrum and rotenone which leave little toxic residue on crops to which they are applied.

Total stocks of pesticides held by manufacturers at the end of the 1955 season were practically unchanged from a year earlier. Stocks of benzene hexachloride, and calcium arsenate were considerably lower than a year earlier, but stocks of a group of commodities, including captan, malathion, methoxychlor and parathion, and 2,4-D, were higher.

## FARM REAL ESTATE

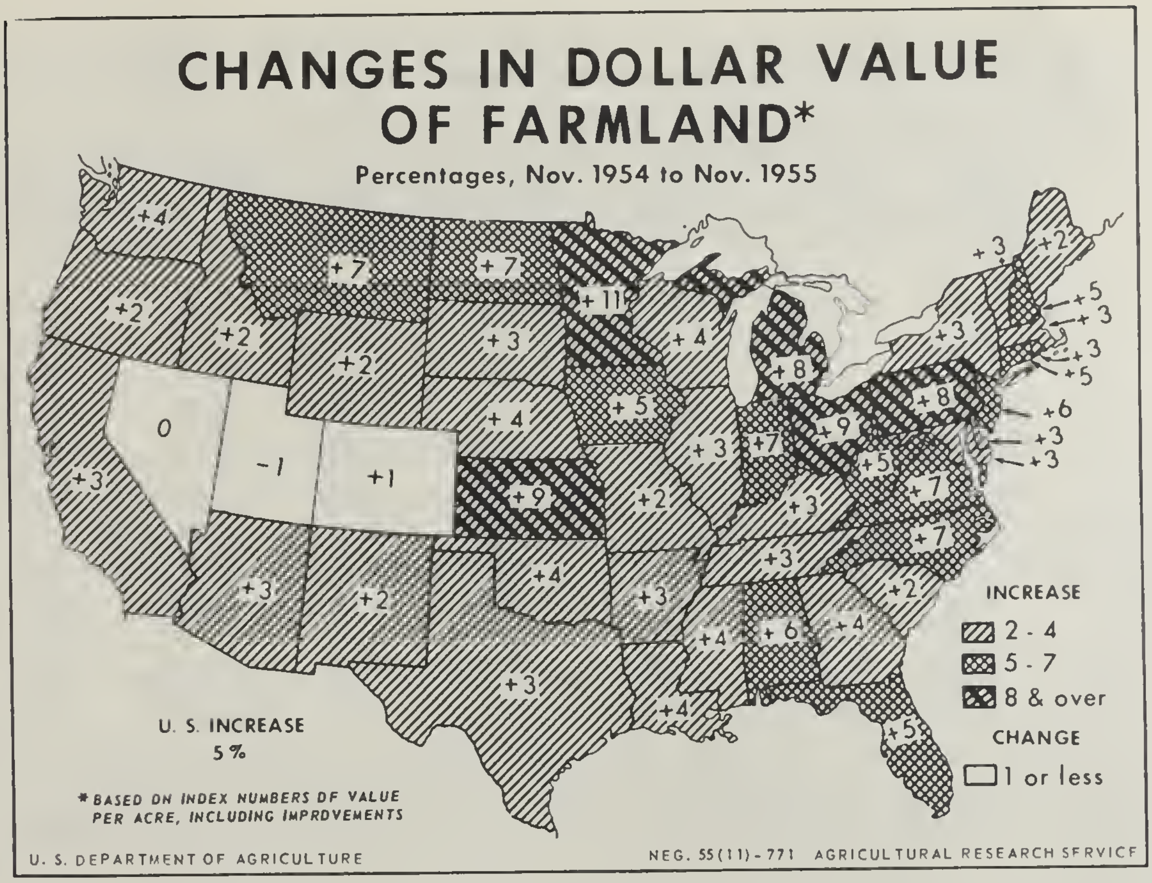
Market prices of farm real estate continued to advance during 1955. Last November they reached a new record high that was 37 percent above 1947-49. Prices rose 5 percent or more in 17 States during the year ended November 1955. Largest gains occurred in Minnesota, up 11 percent, Kansas and Ohio, 9 percent, and Pennsylvania and Michigan up 8 percent. Only 3 States--Nevada, Utah, and Colorado--showed no significant change (fig. 6). Nationally, values advanced an average of 5 percent.

Preliminary indications as of March 1, 1956, are that land values dipped slightly from their November 1955 level in the central part of the country, but continued to advance in the Southeast, eastern Corn Belt, California, and Florida. The national average for March 1, 1956, is likely to be up slightly from last November.

The current strength in prices of farm real estate which began in the first half of 1954, poses difficult problems for landowners and prospective buyers with respect to decisions to buy or sell farmland in view of the high costs of production and the decline in farm income. Many adjustments have been necessary in the combination of agricultural resources in order to achieve more efficient production. Some of these, such as additional fertilizer, better seed, and more efficient feeding and management practices, can be made without increasing the amount of available land, machinery, and equipment. However, many thousands of commercial farms are still below the optimum acreage needed to utilize fully the available labor and equipment. In these situations costs per unit often can be reduced substantially by enlarging the operating unit. To an increasing extent, farmers have chosen to follow this course of action by buying or renting more land, and strong competition has developed for the limited number of farms available for purchase or rental. Census data show, for example, that although the total number of farms declined sharply between 1950 and 1954, the number of owners who rented additional land continued to increase. Sales data show a steady increase during this period in the proportion of all farm transfers that were for farm enlargement. In some areas, a third to two-fifths of all transfers have been for this purpose.

Many established farmers are in favorable position to finance the purchase of additional land, either from savings from past farming operations, or by a mortgage on their total holdings. The purchase of additional land often provides the most direct means of reducing unit costs and thereby maintaining or increasing total net income. A price for an additional tract in excess of its long-term earnings as a separate tract would be justified in such circumstances because the increased earnings from the enlarged farm could be used to meet debt obligations.

The current record level of farm real estate prices creates difficult problems for beginning farmers. Initial capital requirements, for both land and equipment, have mounted steadily in recent years until for many they are at a prohibitive level. Special credit programs, supervised management, and loan guarantees help to strengthen the competitive position of low-equity buyers.


CHANGES IN DOLLAR VALUE OF FARMLAND*
Percentages, Nov. 1954 to Nov. 1955
+4
+7
+7
+11
+3
+2
+2
+2
+2
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U. S. INCREASE
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*BASED ON INDEX NUMBERS OF VALUE PER ACRE, INCLUDING IMPROVEMENTS
INCREASE
▨ 2 - 4
▩ 5 - 7
■ 8 & over
CHANGE
☐ 1 or less
U. S. DEPARTMENT OF AGRICULTURE
NEG. 55(11)-771 AGRICULTURAL RESEARCH SERVICE

Figure 6

Cash Rents

Although the major proportion of rents paid for farms are based on a share of the crops, or a share of crops and livestock, cash rents for hay and pasture are paid in addition on a substantial proportion of rented farms in the North Central region. Half or more of all share tenants in South Dakota, Nebraska, Kansas, Illinois, and Iowa paid some cash in 1954. The rate paid per acre for pasture has increased steadily since 1940. The increase from 1955 to 1956 was about the same as for the preceding years (table 5). Highest rates, averaging about $7.50 per acre, were reported for Iowa, Illinois, Ohio, and Indiana where much of the pasture is cropland and where the carrying capacity of pasture is high. Rents are lowest in the Dakotas and in Nebraska and Kansas.

The practice of renting an entire farm for cash has declined in importance steadily in recent decades, and this trend continued in 1950-54. About one-fifth of all tenants in Wisconsin, Minnesota, and Michigan were cash tenants in 1954, whereas the proportion did not exceed 10 percent in most other North Central States. Although the rate per acre is higher than for pastureland, cash rents for farms have also risen steadily, and the increase continued in 1956. Rents of $10 or more per acre were reported this spring in more than half of the States in the region (table 6).

Table 5.- Cash rent per acre for pastureland and ratio of gross rent to value, Corn Belt, Lake, and Northern Plains States, 1953-56 1/

| State | Cash rent per acre | | | | Ratio of gross rent to value | | | |
|---|---|---|---|---|---|---|---|---|
| | 1953 | 1954 | 1955 | 1956 | 1953 | 1954 | 1955 | 1956 |
| | Dollars | Dollars | Dollars | Dollars | Percent | Percent | Percent | Percent |
| Ohio .......... | 5.30 | 6.50 | 6.60 | 7.00 | 5.4 | 5.1 | 5.2 | 5.7 |
| Indiana ....... | 6.40 | 6.95 | 6.90 | 7.40 | 3.9 | 4.5 | 4.3 | 4.4 |
| Illinois ...... | 7.40 | 7.65 | 7.60 | 7.85 | 3.3 | 3.4 | 3.6 | 3.8 |
| Iowa .......... | 7.95 | 8.05 | 8.25 | 8.70 | 5.2 | 5.4 | 5.1 | 5.7 |
| Missouri ...... | 4.50 | 4.20 | 4.35 | 5.10 | 6.3 | 6.0 | 5.7 | 7.3 |
| Michigan ...... | 3.00 | 3.40 | 3.45 | 4.20 | 5.3 | 5.6 | 5.6 | 5.6 |
| Wisconsin ..... | 4.40 | 4.50 | 5.40 | 5.20 | 7.9 | 8.6 | 9.1 | 8.9 |
| Minnesota ..... | 4.90 | 5.10 | 5.05 | 5.45 | 6.4 | 6.6 | 6.6 | 7.4 |
| North Dakota .. | 1.10 | 1.20 | 1.15 | 1.25 | 5.4 | 5.5 | 5.5 | 5.8 |
| South Dakota .. | 1.75 | 1.80 | 1.90 | 1.85 | 5.1 | 5.5 | 5.6 | 5.7 |
| Nebraska ...... | 3.75 | 3.65 | 3.90 | 3.85 | 5.8 | 5.7 | 5.8 | 5.9 |
| Kansas ........ | 3.20 | 3.20 | 3.45 | 3.55 | 5.3 | 5.8 | 5.8 | 5.9 |

1/ Estimates supplied by crop reporters, as of April 1, for calendar years indicated.

Table 6.- Cash rent per acre for farms rented wholly for cash, and ratio of gross cash rent to value, Corn Belt, Lake and Northern Plains States, 1953-56 1/

| State | Cash rent per acre | | | | Ratio of gross rent to value | | | |
|---|---|---|---|---|---|---|---|---|
| | 1953 | 1954 | 1955 | 1956 | 1953 | 1954 | 1955 | 1956 |
| | Dollars | Dollars | Dollars | Dollars | Percent | Percent | Percent | Percent |
| Ohio .......... | 9.30 | 9.70 | 10.45 | 10.70 | 5.6 | 5.2 | 5.4 | 5.5 |
| Indiana ....... | 13.00 | 13.85 | 12.95 | 14.70 | 6.5 | 6.9 | 5.8 | 6.6 |
| Illinois ...... | 15.10 | 15.90 | 16.50 | 17.25 | 5.5 | 5.6 | 5.6 | 5.7 |
| Iowa .......... | 13.35 | 13.50 | 14.05 | 14.85 | 5.9 | 6.1 | 6.0 | 6.2 |
| Missouri ...... | 6.80 | 6.70 | 7.10 | 7.50 | 7.1 | 6.8 | 6.8 | 6.9 |
| Michigan ...... | 8.90 | 9.10 | 9.00 | 10.25 | 6.1 | 6.5 | 6.4 | 6.3 |
| Wisconsin ..... | 11.20 | 10.80 | 11.30 | 11.75 | 8.3 | 8.7 | 8.1 | 8.5 |
| Minnesota ..... | 9.30 | 9.45 | 9.90 | 10.90 | 6.8 | 6.9 | 6.8 | 7.1 |
| North Dakota .. | 2.75 | 3.00 | 2.70 | 3.30 | 7.2 | 7.6 | 7.6 | 8.4 |
| South Dakota .. | 4.20 | 4.10 | 4.30 | 4.65 | 6.8 | 7.1 | 7.5 | 8.1 |
| Nebraska ...... | 5.40 | 5.90 | 6.50 | 6.15 | 5.7 | 6.1 | 6.4 | 6.0 |
| Kansas ........ | 5.85 | 5.40 | 5.65 | 6.05 | 6.5 | 6.4 | 6.1 | 6.4 |

1/ Estimates supplied by crop reporters, as of April, for calendar years indicated.

Both pasture rents and farm rents have held about steady in relation to the market value of the land so rented. The ratio of gross cash rent per acre to value shown in tables 5 and 6 applied to the estimated market value of the land in a particular farm provides a general guide as to what the cash rental rate would be for the 1956 season.

## INTEREST, TAXES AND INSURANCE

### Interest

The interest paid by farmers in 1955 on all types of debt totaled about $950 million, approximately 7 percent more than in 1954. In 1956 interest charges will probably reach $1 billion. This rise in interest cost resulted primarily from an expansion in the amount of credit that farmers used. A small increase in interest rates was also a factor.

Both real-estate and non-real-estate debt of farmers rose during 1955--about 10 percent and 8 percent respectively. The several factors that were responsible for this increase included the cost-price squeeze that farmers have faced. This caused a rise in loans for production expenditures and increased financing of improvements and additional land that some farmers believed were necessary to maintain efficiency and incomes. A further expansion of debt, stemming in part from these same factors, is expected in 1956. At the beginning of 1956, farm real-estate debt totaled about $9.0 billion and non-real-estate debt, about $7.9 billion.

During the early months of 1956, open-market money rates rose, and credit in general tightened. This may tend to cause interest rates on loans to farmers to rise and loan funds for some lenders to be more restricted. However, farmers may not experience much change in the cost or availability of credit.

### Taxes

Preliminary reports indicate that State and local property taxes paid by farmers in 1956 (levied mainly in 1955) will be about 3 percent greater than they were in 1955. Taxes levied on farm real estate are expected to be about 6 percent greater, whereas taxes levied on personal property are expected to be about 3 percent less than they were in 1955.

Because of increased coverage of hired farm workers under the Old Age and Survivors Insurance program in 1955, taxes payable by their employers will be about 3 times as high in 1956 as in any previous year. It has been estimated that the employer's share of the tax payable in 1956 will be about $40 million.

## Insurance

Complete information is not available on the cost of all insurance carried by farmers; but the amount of insurance on farm property continued to increase during 1955, and it will probably be still higher in 1956. The net cost to farmers probably will increase also because of the higher amounts of insurance carried, even though assessment rates change very little.

Premiums and assessments paid to farm mutual insurance companies in 1955 amounted to about $95 million, for more than $30 billion of fire insurance. About $57 million was paid out for losses sustained by members and $27 million for operating expenses, and $10 million was added to their safety funds or reserves.

Farmers have also increased the amount of their insurance against loss from hail damage to growing crops each year since 1950. They paid about $75 million in premiums for about $2 billion worth of such insurance in 1955, and they received about $45 million in payments for crop-hail losses. The amount of hail insurance will likely increase in 1956, but the net cost to farmers (premiums minus losses) will depend largely on the extent of hail damage to the insured crops.

Farmers also pay more than $20 million a year for premiums on all-risk Federal crop insurance. Since 1950, payments received by farmers for crop losses have been substantially equal to premium costs.

# PRODUCTION COSTS ON 23 IMPORTANT TYPES OF FARMS [1]

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Prices paid by farmers for goods and services used in production, including wage rates, interest, and taxes, rose about 12 percent from 1947-49 to 1955 for farmers as a whole in the United States. From 1954 to 1955 the index of these prices remained unchanged.

Although the overall pattern of prices and cost rates reflects the average situation for farmers in the United States as a group, many important differences exist among types of farms in different areas throughout the country. From 1947-49 to 1955, for example, increases in prices paid for goods and services used in production including wage rates and taxes ranged from 1 percent on irrigated cotton farms in the High Plains of Texas to 23 percent on cash grain farms in the Corn Belt (table 7). Among 23 important types of farms studied, 14 had increases in prices and cost rates paid of 15 percent or more. Only 6 of the 23 types of farms had increases of less than 10 percent from 1947-49 to 1955.

Changes in prices and cost rates paid by operators differed considerably from 1954 to 1955. They averaged higher on 10 types of farms, lower on 10 types, and remained unchanged on 3 types. The greatest increase, about 9 percent, occurred on southern Piedmont cotton farms and the greatest decrease, about 5 percent, occurred on cattle ranches in the Southwest.

## Why Costs Vary Among Farms

There are several reasons why changes in cost rates and prices paid by farmers who operate various types of farms differ. Two important reasons are: (1) Certain expenditure items are relatively more important on some types of farms than on others. (2) Prices paid for some items change relatively more than prices paid for other items from year to year and over the longer time.

Expenditures for hired labor comprised from around a fifth to a third of total cash expenditures on cotton and tobacco farms and less than 10 percent on most dairy, Corn Belt, and wheat farms. Expenditures for power and and machinery in 1955 ranged from 15 percent of total cash expenditures on southwestern sheep ranches to 66 percent on wheat-small grain-livestock

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[1] Additional detail is given in "Costs and Returns, 1955 (with comparisons) Commercial Family-Operated Farms, by Types and Location". U. S. Dept. of Agr., Agr. Inform. Bul.-- (In Process)

Table 7.- Prices paid by farmers, and related data, commercial family-operated farms, by type, 1955

| Type of farm and location | Prices or rates paid | | | | Relative importance 1/ | | |
|---|---|---|---|---|---|---|---|
| | Goods and services | Hired labor | Feed, seed and livestock | Nonfarm goods and services | Hired labor | Feed, seed and livestock | Nonfarm goods and services |
| | Index numbers (1947-49=100) | | | | Percent | Percent | Percent |
| Dairy farms: | | | | | | | |
| Central Northeast | 107 | 142 | 89 | 121 | 8 | 39 | 53 |
| Eastern Wisconsin | 115 | 123 | 92 | 122 | 5 | 20 | 75 |
| Western Wisconsin | 117 | 123 | 93 | 127 | 6 | 22 | 72 |
| Corn Belt farms: | | | | | | | |
| Hog-dairy | 113 | 124 | 94 | 121 | 9 | 25 | 66 |
| Hog-beef raising | 113 | 128 | 92 | 124 | 7 | 29 | 64 |
| Hog-beef fattening | 103 | 123 | 92 | 123 | 5 | 59 | 36 |
| Cash grain | 123 | 133 | 99 | 128 | 6 | 14 | 80 |
| Tobacco farms: | | | | | | | |
| Tobacco-livestock (Kentucky) | 118 | 113 | 94 | 123 | 21 | 10 | 69 |
| Tobacco-cotton (North Carolina) | 119 | 2/123 | 106 | 119 | 36 | 5 | 59 |
| Cotton: | | | | | | | |
| Southern Piedmont | 118 | 2/153 | 95 | 109 | 29 | 8 | 63 |
| Black Prairie, Texas | 110 | 99 | 98 | 119 | 30 | 9 | 61 |
| High Plains, Texas (nonirrigated) | 109 | 84 | 97 | 119 | 17 | 7 | 76 |
| High Plains, Texas (irrigated) | 101 | 90 | 91 | 108 | 28 | 3 | 69 |
| Spring wheat farms (Northern Plains): | | | | | | | |
| Wheat-small grain-livestock | 116 | 104 | 87 | 120 | 10 | 5 | 85 |
| Wheat-corn-livestock | 117 | 106 | 96 | 130 | 8 | 13 | 79 |
| Wheat-roughage-livestock | 115 | 104 | 86 | 122 | 4 | 12 | 84 |
| Winter wheat farms: | | | | | | | |
| Southern Plains | 120 | 118 | 96 | 126 | 6 | 14 | 80 |
| Wheat-pea (Washington and Idaho) | 118 | 135 | 95 | 118 | 13 | 6 | 81 |
| Sheep ranches: | | | | | | | |
| Northern Plains | 116 | 124 | 101 | 125 | 25 | 31 | 44 |
| Southwest | 103 | 3/ | 3/ | 3/ | 13 | 50 | 37 |
| Cattle ranches: | | | | | | | |
| Northern Plains | 121 | 128 | 111 | 121 | 14 | 12 | 74 |
| Intermountain | 121 | 144 | 115 | 121 | 12 | 31 | 57 |
| Southwest | 104 | 117 | 94 | 114 | 7 | 47 | 46 |

1/ Based on 1955 expenditures. 2/ Includes cropper labor. 3/ Not available.

farms in the Northern Plains. Prices paid for machinery were slightly higher in 1955 than in other recent years.

Closely associated with these observations is the fact that adjustments to reduce certain inputs have been much greater on some types of farms than on others. For example, in 1955 winter wheat farmers used around 30 percent less labor per acre of land than they used in 1937-41, whereas Corn Belt farmers and livestock ranchers used around 10 percent less labor per acre of land. However, in 1955, winter wheat farmers had from $2,200 to $3,500 of total capital (based on 1947-49 dollars) per 100 hours of man labor compared with around $1,000 to $2,000 for Corn Belt farmers and livestock ranchers.

## Expenditure for Nonfarm Goods and Services have Increased

With the shift from farm produced animal power to various kinds of labor-saving mechanical power, farmers generally have stepped up total production, production per hour of man labor, and production per unit of input. However, they have become more dependent on industry for items used in production. In 1955, expenditures for nonfarm goods and services used in production averaged 69 percent of total cash expenditures on tobacco-livestock farms in Kentucky and 80 percent on cash grain farms in the Corn Belt and on winter wheat farms in the Southern Plains. In the 1930's, expenditures for nonfarm items averaged around 57 percent on tobacco-livestock farms and 75 percent on cash grain and winter wheat farms. Of the 23 types of farms studied, cash expenditures for nonfarm goods and services exceeded 50 percent of the total cash outlay on 19 types of farms. Expenditures for nonfarm goods and services exceeded two-thirds of the total cash expenditures on 13 of the 23 types of farms.

## Costs of Production Have Risen on Most Farms

Total cost per unit of production was higher in 1955 than in 1947-49 on 19 of the 23 types of farms studied (table 8). The reductions in resources required per unit of product generally have not offset the increases in cost rates and prices paid. Changes in production costs per unit ranged from a decrease of approximately 11 percent on wheat-small grain-livestock farms in the Northern Plains to an increase of 49 percent on winter wheat farms in the Southern Plains.

Production costs not only vary among the different types of farms--they differ significantly from year to year on the same farm. Prices and cost rates, yields, and efficiencies change from year to year, and changes in these factors materially affect unit costs of production. For example, the index of total cost per unit of production on Piedmont cotton farms was nearly 21 percent lower in 1955 than in 1954, despite about 9 percent higher cost rates and prices paid in 1955 (tables 8 and 9). Crop yields were nearly 56 percent higher and production per unit of input was nearly a third higher in 1955 than in 1954.

Table 8.- Cost of production, and related data, commercial family-operated farms, by type, 1955 1/

| Type of farm and location | Per unit of production |  | Prices and rates paid 4/ | Crop yields | Net farm production | Production |  |
|---|---|---|---|---|---|---|---|
|  | Total cost 2/ | Operating expense 3/ |  |  |  | Per hour of labor | Per unit of input |
|  | Index numbers (1947-49=100) |  |  |  |  |  |  |
| Dairy farms: |  |  |  |  |  |  |  |
| Central Northeast | 96 | 92 | 107 | 116 | 134 | 157 | 119 |
| Eastern Wisconsin | 108 | 115 | 115 | 121 | 113 | 138 | 108 |
| Western Wisconsin | 98 | 107 | 117 | 124 | 125 | 147 | 120 |
| Corn Belt farms: |  |  |  |  |  |  |  |
| Hog-dairy | 108 | 106 | 113 | 109 | 122 | 124 | 111 |
| Hog-beef raising | 106 | 96 | 113 | 114 | 127 | 114 | 112 |
| Hog-beef fattening | 112 | 114 | 103 | 102 | 107 | 114 | 99 |
| Cash grain | 123 | 127 | 123 | 116 | 116 | 118 | 103 |
| Tobacco farms: |  |  |  |  |  |  |  |
| Tobacco-livestock (Kentucky) | 129 | 130 | 118 | 113 | 97 | 107 | 93 |
| Tobacco-cotton (North Carolina) | 115 | 115 | 119 | 112 | 107 | 117 | 105 |
| Cotton farms: |  |  |  |  |  |  |  |
| Southern Piedmont | 96 | 99 | 118 | 140 | 145 | 142 | 127 |
| Black Prairie, Texas | 104 | 102 | 110 | 131 | 119 | 146 | 114 |
| High Plains, Texas (nonirrigated) | 135 | 124 | 109 | 66 | 68 | 97 | 77 |
| High Plains, Texas (irrigated) | 123 | 119 | 101 | 127 | 118 | 102 | 89 |
| Spring wheat farms (Northern Plains): |  |  |  |  |  |  |  |
| Wheat-small grain-livestock | 89 | 87 | 116 | 123 | 139 | 139 | 126 |
| Wheat-corn-livestock | 125 | 126 | 117 | 94 | 100 | 98 | 90 |
| Wheat-roughage-livestock | 101 | 104 | 115 | 121 | 133 | 119 | 109 |
| Winter wheat farms: |  |  |  |  |  |  |  |
| Southern Plains | 149 | 142 | 120 | 92 | 78 | 95 | 79 |
| Wheat-pea (Washington and Idaho) | 131 | 131 | 118 | 116 | 112 | 106 | 93 |
| Sheep ranches: |  |  |  |  |  |  |  |
| Northern Plains | 117 | 122 | 116 | 101 | 111 | 103 | 99 |
| Southwest | 124 | 112 | 103 | 133 | 99 | 108 | 87 |
| Cattle ranches: |  |  |  |  |  |  |  |
| Northern Plains | 120 | 127 | 121 | 100 | 103 | 100 | 97 |
| Intermountain | 120 | 159 | 121 | 95 | 113 | 112 | 97 |
| Southwest | 126 | 112 | 104 | 118 | 97 | 107 | 87 |

1/ Preliminary. 2/ Includes charges for capital and unpaid labor. 3/ Includes property taxes but no interest. 4/ From table 7.

Table 9.- Cost of production, and related data, commercial family-operated farms, by type, 1954 1/

| Type of farm and location | Per unit of production | | Prices and rates paid | Crop yields | Net farm production | Production | |
|---|---|---|---|---|---|---|---|
| | Total cost 2/ | Operating expense 3/ | | | | Per hour of labor | Per unit of input |
| | Index numbers (1947-49=100) | | | | | | |
| **Dairy farms:** | | | | | | | |
| Central Northeast | 101 | 97 | 109 | 113 | 126 | 148 | 114 |
| Eastern Wisconsin | 108 | 114 | 117 | 122 | 113 | 132 | 108 |
| Western Wisconsin | 103 | 114 | 118 | 112 | 118 | 135 | 114 |
| Corn Belt farms: | | | | | | | |
| Hog-dairy | 103 | 102 | 113 | 124 | 125 | 130 | 116 |
| Hog-beef raising | 119 | 117 | 114 | 90 | 107 | 102 | 99 |
| Hog-beef fattening | 110 | 114 | 105 | 110 | 110 | 118 | 101 |
| Cash grain | 123 | 127 | 121 | 112 | 111 | 116 | 102 |
| Tobacco farms: | | | | | | | |
| Tobacco-livestock (Kentucky) | 112 | 114 | 121 | 122 | 116 | 120 | 109 |
| Tobacco-cotton (North Carolina) | 128 | 131 | 118 | 100 | 102 | 107 | 93 |
| Cotton farms: | | | | | | | |
| Southern Piedmont | 119 | 121 | 108 | 90 | 110 | 113 | 96 |
| Black Prairie, Texas | 138 | 125 | 111 | 80 | 80 | 112 | 86 |
| High Plains, Texas (nonirrigated) | 125 | 115 | 104 | 79 | 72 | 100 | 81 |
| High Plains, Texas (irrigated) | 113 | 109 | 99 | 135 | 124 | 111 | 94 |
| Spring wheat farms (Northern Plains): | | | | | | | |
| Wheat-small grain-livestock | 137 | 129 | 116 | 72 | 87 | 87 | 82 |
| Wheat-corn-livestock | 123 | 121 | 117 | 95 | 101 | 101 | 93 |
| Wheat-roughage-livestock | 125 | 125 | 113 | 92 | 104 | 96 | 89 |
| Winter wheat farms: | | | | | | | |
| Southern Plains | 125 | 121 | 117 | 88 | 92 | 106 | 91 |
| Wheat-pea (Washington and Idaho) | 98 | 100 | 120 | 150 | 143 | 136 | 124 |
| Sheep ranches: | | | | | | | |
| Northern Plains | 121 | 122 | 117 | 91 | 109 | 100 | 97 |
| Southwest | 137 | 127 | 97 | 119 | 73 | 87 | 77 |
| Cattle ranches: | | | | | | | |
| Northern Plains | 108 | 118 | 119 | 91 | 113 | 110 | 104 |
| Intermountain | 123 | 168 | 115 | 92 | 104 | 106 | 91 |
| Southwest | 149 | 135 | 110 | 104 | 80 | 86 | 76 |

1/ Revised. 2/ Includes charges for capital and unpaid labor. 3/ Includes property taxes but no interest.

Changes in output of livestock, crop yields, overall production efficiency, and cost rates and prices paid help to explain why production costs increased or decreased more on some farms than on others. The greatest increase from 1947-49 to 1955 in total costs per unit of production took place on winter wheat farms in the Southern Plains. In 1955, crop yields and total production were well below the 1947-49 averages and cost rates and prices paid averaged a fifth higher on winter wheat farms. Decreases took place on wheat-small grain-livestock farms, Southern Piedmont cotton farms, and central Northeast dairy farms. Crop yields and production were record high in 1955 on Piedmont cotton farms. However, cost rates and prices paid averaged nearly a fifth higher in 1955 on Piedmont cotton farms.

Operating expense (cash expenditures including depreciation) per unit of production also was higher in 1955 than in 1947-49 on 19 of the 23 types of farms. Increases in operating costs per unit of production on winter wheat farms were exceeded only by increases on cattle ranches in the Intermountain region. Despite low crop and pasture yields, cattle ranchers kept production up in 1955 by relatively high expenditures for feed. Cost rates and prices paid by these ranchers in 1955 averaged a fifth higher than in 1947-49.

Operating expense per dollar of gross farm income, a common measure of changes in profitability, ranged from 48 cents on wheat-pea farms in Washington and Idaho to 80 cents on sheep ranches in the Southwest. Operating expense per dollar of gross farm income ranged between 55 and 65 cents on most types of farms (table 10). The variation was much less in 1955 than in most years. Gross farm income per dollar of estimated capital investment ranged from around 10 cents on sheep and cattle ranches in the Southern Plains to nearly 40 cents on central Northeast dairy farms and tobacco-cotton farms in the Coastal Plains of North Carolina. It ranged from 15 to 30 cents on 15 of the 23 types of farms studied.

Table 10.- Costs and returns per farm, commercial family-operated farms, by type, 1955 1/

| Type of farm and location | Farmland | | Farm labor | | Total farm capital January 1 | Gross farm income | Operating expense | Net farm income |
|---|---|---|---|---|---|---|---|---|
| | Total | Cropland harvested | Total | Hired | | | | |
| | Acres | Acres | Hours | Hours | Dollars | Dollars | Dollars | Dollars |
| Dairy farms: | | | | | | | | |
| Central Northeast | 201 | 77 | 4,450 | 710 | 26,000 | 10,122 | 5,689 | 4,433 |
| Eastern Wisconsin | 127 | 67 | 4,360 | 520 | 33,070 | 7,427 | 4,588 | 2,839 |
| Western Wisconsin | 143 | 61 | 4,040 | 490 | 21,890 | 6,145 | 3,741 | 2,404 |
| Corn Belt farms: | | | | | | | | |
| Hog-dairy | 163 | 101 | 4,490 | 580 | 43,530 | 10,091 | 5,902 | 4,189 |
| Hog-beef raising | 218 | 101 | 3,760 | 260 | 34,790 | 6,513 | 3,527 | 2,986 |
| Hog-beef fattening | 199 | 138 | 4,180 | 670 | 60,960 | 16,266 | 12,404 | 3,862 |
| Cash grain | 230 | 192 | 3,390 | 470 | 89,300 | 13,291 | 6,924 | 6,367 |
| Tobacco farms: | | | | | | | | |
| Tobacco-livestock (Kentucky) | 116 | 31 | 3,780 | 1/1,090 | 23,590 | 5,539 | 2,689 | 2,850 |
| Tobacco-cotton (North Carolina) | 100 | 40 | 6,800 | 1/3,880 | 20,740 | 8,049 | 4,760 | 3,289 |
| Cotton farms: | | | | | | | | |
| Southern Piedmont | 177 | 58 | 4,560 | 1/1,960 | 15,510 | 5,134 | 2,894 | 2,240 |
| Black Prairie, Texas | 171 | 103 | 4,120 | 1,640 | 26,410 | 6,608 | 3,636 | 2,972 |
| High Plains, Texas (nonirrigated) | 370 | 282 | 3,330 | 1,210 | 37,470 | 7,529 | 4,815 | 2,714 |
| High Plains, Texas (irrigated) | 314 | 277 | 8,150 | 5,730 | 86,900 | 23,076 | 14,484 | 8,592 |
| Spring wheat farms (Northern Plains): | | | | | | | | |
| Wheat-small grain-livestock | 690 | 443 | 3,300 | 640 | 41,590 | 11,397 | 5,597 | 5,800 |
| Wheat-corn-livestock | 480 | 328 | 3,980 | 480 | 42,060 | 7,005 | 4,687 | 2,318 |
| Wheat-roughage-livestock | 770 | 413 | 3,530 | 230 | 39,530 | 9,258 | 5,139 | 4,119 |
| Winter wheat farms: | | | | | | | | |
| Southern Plains | 714 | 364 | 2,480 | 330 | 75,450 | 10,044 | 4,932 | 5,112 |
| Wheat-pea (Washington and Idaho) | 536 | 361 | 3,320 | 1,020 | 146,510 | 20,072 | 9,660 | 10,412 |
| Sheep ranches: | | | | | | | | |
| Northern Plains | 6,240 | 237 | 8,060 | 3,980 | 82,240 | 16,605 | 12,419 | 4,186 |
| Southwest | 12,805 | 18 | 5,330 | 2,650 | 177,880 | 16,913 | 13,610 | 3,303 |
| Cattle ranches: | | | | | | | | |
| Northern Plains | 4,170 | 293 | 4,490 | 1,220 | 68,950 | 8,867 | 6,323 | 2,544 |
| Intermountain region | 1,695 | 166 | 4,860 | 840 | 64,760 | 10,630 | 6,112 | 4,518 |
| Southwest | 10,610 | 21 | 3,590 | 1,010 | 129,760 | 11,233 | 8,112 | 3,121 |

1/ Includes cropper labor.

## NITROGEN FERTILIZER IN FARMING TODAY

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Increased use of nitrogen, and of all fertilizers is but one facet of the gain in farm technology that has taken place in recent years. Substantial yield responses to nitrogen focus attention to it, often to the exclusion of other factors in the combination of improved practices that jointly account for increases in yield per acre and in total farm output. Technical gains provide an important means whereby individual farmers in position to adopt them can maintain incomes when costs rise or prices fall. This is true for use of nitrogen as well as for other technical improvements.

### More Plant Capacity for Nitrogen

In recent years, plant capacity for manufacture of nitrogen has been greatly increased; much of it from utilizing byproducts of oil refining, so that costs are substantially reduced. The trend is toward lower prices for nitrogen relative to the price of the other principal nutrients in fertilizers. Comparisons of prices paid for nitrogen over time are shown in the fertilizer situation statement earlier in this report. Plant capacity for commercial nitrogen on July 1 will stand at about 3,900,000 tons. This compares with production of about 2,700,000 tons during 1954-55 and 1,450,000 tons in 1950.

### Fertilizer Use Rising But Marginal Returns Still High

The use of commercial plant nutrients has steadily expanded since the period immediately preceding World War II. Over most of this period it was apparent that farmers would have used more, particularly nitrogen, had it been available. In more recent years reductions in farm income have not been accompanied by reductions in use of commercial plant nutrients as was true before the war. Measured in terms of plant nutrients, fertilizer consumption has continued to rise during the past 3 years, even with reductions in farm income. The rising plant nutrient content has no doubt been a factor, but it also appears that fertilizer is in a stronger competitive position relative to other inputs than formerly and that farmers are recognizing this fact. Strong yield response of many crops to nitrogen relative to response to other nutrients was well recognized before the more recent declines in its cost relative to the cost of other nutrients.

Notwithstanding the large increase in use of plant nutrients, particularly nitrogen, many farmers are using much less than would represent practical optimum rates for their situations. Even for cotton in the South, estimates of general response indicate that on the average, rates are at a level at which an additional dollar spent for fertilizer would yield an additional return of about five dollars. This is no doubt well below the practical optimum for most farmers and it provides an indication that current rates on many other crops may also be below optimum levels after allowing for risk, uncertainty and restrictions on funds available for fertilizer.

## Other Improvements Make Fertilizer More Profitable

Several factors contribute to the relatively high-level use of nitrogen. Changes in technology have been of major importance. Cost per pound of nitrogen has risen relatively little since 1940. But changes in prices of crops have greater effect on net returns per acre than do similar changes in the price paid for nitrogen. Acreage allotments may have had a direct effect in some areas. During the World War II period and before the re-advent of the surplus problem, the generally favorable farm price-cost ratio was undoubtedly the major factor. The ratio was favorable for farming in general, and it was favorable with reference to crop prices and fertilizer costs for the crops on which applications were made.

Improvements in farm technology occurring simultaneously with favorable economic conditions, made fertilizer applications more profitable than formerly. For example, effective insect and disease control has raised recommended and practiced rates of application for crops on which fertilizer has long been used. Higher yielding varieties respond more to fertilizer and to other good practices. Mechanization, through making farm operations more effective and timely, contributes much to the effectiveness of the fertilizer applied.

## Production Costs Lower With Fertilizer

The effect of applying nitrogen on cost per unit of production is illustrated in table 11. This is based on estimated yield response of corn to nitrogen on Corn Belt soils of below average fertility, when phosphorus and potassium are applied as needed and other improved practices are followed. For purposes of the illustration, costs per acre other than fertilizer are assumed to be $50.00. Cost of nitrogen is assumed to be $0.14 a pound. The price of corn is assumed to be $1.40 a bushel.

In order to allow for risk and uncertainty, most farmers would apply less than the calculated most profitable rate of about 135 pounds (table 11) even though they would estimate the response to be as indicated in this illustration. Probably a rate of about 90 pounds would be appropriate for many farmers in this situation. The additional cost for the last 30 pounds would be $4.20 but the additional return at 90 pounds, over the 60-pound application would be $8.89. This seems an adequate margin for risk, where response is similar to that shown in table 11. Farmers can see a clear gain in reducing costs per bushel from $1.23 at no application to less than $0.90 a bushel at an application that represents about half the calculated most profitable rate. According to recent estimates, farmers in the area to which table 11 generally applies, are applying about 40 pounds of N per acre. If increased application of nitrogen is combined with other improved practices, farmers could slightly reduce average cost per bushel, substantially increase net returns per acre, and still leave adequate margin for risk, by doubling their current rates of application.

Table 11.- Yields of corn at varying rates of nitrogen, estimated total costs per acre, average cost per bushel, and value of additional yield for each 30 pounds of nitrogen added 1/

| Rate of N per acre | Yield per acre | Assumed total cost per acre 2/ | Average cost per bushel | Value of additional yield 3/ |
|---|---|---|---|---|
| Pounds | Bushels | Dollars | Dollars | Dollars |
| 0 | 40.52 | 50.00 | 1.23 | --- |
| 30 | 56.04 | 54.20 | .97 | 21.73 |
| 60 | 65.94 | 58.40 | .89 | 13.86 |
| 90 | 72.29 | 62.60 | .87 | 8.89 |
| 120 | 76.32 | 66.80 | .88 | 5.64 |
| 150 | 78.89 | 71.00 | .90 | 3.60 |

1/ Based on data from "Profitable Use of Fertilizer in the Mid-West," North Central Regional Publication No. 54, Madison, Wis., December 1954.

2/ Cost of $50.00 per acre without fertilizer is assumed. Each 30-pound unit of N costs $4.20.

3/ The most profitable rate occurs when the value of the additional yield equals the cost of additional fertilizer, or $4.20.

## Fertilizer Influences Farming Systems

The place of nitrogen in rotations and effects of its use on cropping systems that would be most profitable, is another aspect of the influence of modern technology as related to current farm problems. The effect of nitrogen on profitability of different rotations must be appraised in relation to other factors such as erosion and other soil characteristics that determine whether productivity can be sustained when nitrogen is substituted for legumes in the rotation. But in some areas where slope and soil characteristics permit, there is evidence that the market value of crop production per 100 acres often is increased when nitrogen is added and the rotation is shortened, in some cases even to the exclusion of legumes.

Where physical factors permit, the choice of rotation for the individual farmer is influenced by the amount of grain sacrificed per pound of forage gained as more forage is included in the rotation. The answer, however, is different, depending on the level of use of fertilizer. Moderate to high rates of fertilizer, particularly nitrogen, increase yields of grain more than they increase yields of forage crops. Thus, as more forage is included in a fertilized rotation, more grain is sacrificed per pound of forage gained, than when more forage is included in the same rotation with little or no application of fertilizer.

An unfertilized rotation in a western Corn Belt experiment showed a higher annual market value of crop production as the acreage of hay was increased to about 30 percent of the cropland, but the value was reduced as more forage was added. But if the rotation were fertilized, based on response data applicable to the area, the annual value of product from the rotation was higher for the straight grain rotation than when any forage was included, after deducting the cost of the fertilizer.

In many situations, inclusion of forage up to some point, results in additional production of grain, even when the rotation is fertilized. But generally, the effect of using fertilizer is to include less legumes in order to obtain the most profitable rotation.

On livestock farms, however, the market value of crop production is not the only factor to consider. Good livestock producers often can obtain more economical use of resources by including forage even when on the basis of market value of crop production it would not be justified. They can get more than market value from forage, and other feed crops, by efficient livestock operations. It is also important to consider the type of soil and its susceptibility to erosion.

The effect of fertilizer, particularly nitrogen, on rotations that would be most profitable, has important implications when considering changes in farming, whether for the individual farm, or for farmers generally. Farmers can reduce unit costs and increase the margin of returns over total cost by increasing rates of application of fertilizer on the principal cash and feed crops. This puts them in stronger position to make investments in soil improvements often needed when shifting acreage from "surplus" crops to other uses. Many farmers have used fertilizers, particularly phosphate and potash, to aid in making changes that include utilization of forage grown on land diverted from surplus crops. However, for many farmers, this involves a substantial net cost that presents a major problem in the effort to adjust to changes in supply-demand relationships.

The first farmers to adopt new improvements that result in higher yields gain most from advancing technology. As adoption becomes more general, if the demand situation remains unchanged, the effect of increased total production is to lower prices, because demand for farm products is relatively inelastic.

Transition problems are difficult particularly for farmers who do not or cannot adopt the new methods. But individual farmers who can do so, adopt them, thereby increasing their net returns. Failure to adopt improved methods, and to utilize them in making needed changes in farming would have more serious consequences for individual farmers, and for farmers in general.

## FEED ADDITIVES HELP TO CUT LIVESTOCK PRODUCTION COSTS

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The use of feed additives in livestock rations has increased rapidly in recent years. These additives include minerals, vitamins, urea, and various medications, such as antibiotics, and the hormone, stilbestrol. Minerals, vitamins, and antibiotics have been widely used in feeds for several years. Stilbestrol was approved for addition to rations for beef cattle in November of 1954, and it is estimated that since then more than 5 million cattle have been fed on rations that contain this hormone.

### Preliminary Experimental Results

Much experimental work is being done concerning feeding of these substances, and complete evaluation will have to await further research. Some of the preliminary results can be summarized as follows: For stilbestrol fed beef cattle, results of trials at 9 State experiment stations indicate an increase in the average rate of gain of one-third of a pound per day, or 19 percent, and a 12-percent saving of feed per pound of gain. 1/ However, cattle that receive stilbestrol must be carried to heavier weights to reach the same degree of finish.

According to the National Research Council, addition of antibiotics to rations for young pigs may increase the rate of growth from 10 to 20 percent, and permit an increase in feeding efficiency up to about 5 percent. Antiobiotics reduce scouring and the number of stunted pigs. Greatest value is observed in the early growth period. Effects are reduced when improved sanitation practices are used. Addition of antibiotics to creep-feeding rations may increase pig weights by 5 to 10 pounds at 56 days of age.

Preliminary research findings indicate that antibiotics may offer possibilities for improved efficiency in the feeding of beef and dairy cattle and sheep.

### Advantages and Disadvantages of Urea

Urea is used in increasing amounts in rations for ruminants, particularly beef cattle, to replace part of the protein requirements. Addition of urea to the ration provides food for bacteria in the rumen and these in turn supply the animal with protein. The important relationship in determining the economy of urea feeding is the relative price of carbohydrate, and of protein feed. The cost of adding urea to the ration amounts only to around 4 to 5 percent of the total cost of a beef fattening ration.

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1/ Experiments summarized by Burroughs, Culbertson, and Kastelic, quoted by T. C. Byerly in "The Significance of Animal Hormones in Animal Feeding." Talk before The Animal Nutrition Research Council, Washington, D. C. (Processed) p. 5.

It is generally considered that 1 pound of urea and 6 pounds of corn will replace 7 pounds of soybean oilmeal. Therefore, it should be profitable to feed urea if the price of a pound of corn is less than seven-sixths of the price of a pound of soybean oilmeal minus one-sixth of the price of a pound of urea.

When prices of protein feeds are high in relation to prices of grains, it should be possible to use urea to lower the cost of feeding ruminants. A comparison of past prices indicates that often it would pay to feed urea to beef cattle, particularly in western areas where prices of protein feeds are relatively high. In some instances, it would be profitable to feed urea to dairy cattle, particularly when high-protein roughages are not available. The use of urea may provide an opportunity to increase the usefulness of nonlegume and low quality roughages in maintenance rations. Urea is toxic if a large quantity is consumed at one time. In general, not more than one-third of the total nitrogen in the diet should be urea. It is necessary to control carefully the amount fed and to mix it uniformly in feed mixtures. Farmers who feed urea usually buy it in a mixed feed.

## Antibiotics and Stilbestrol Reduce Feed Needed Per Pound of Gain

The advantages of feeding urea vary with price relationships. Apparently, however, the use of antibiotics and stilbestrol permit reductions in feed costs regardless of the price of feed because they reduce the amount of feed needed per pound of gain. Feed conversion efficiency, that is the pounds of feed required per pound of livestock product, has not changed greatly over the years for most classes of livestock.

## It Pays to Improve Feed Conversion Efficiency

Marked gains have been made in feed conversion efficiency for poultry. In the case of broilers, feed consumed per pound of gain has been reduced about 25 percent in the last 15 years. Up to the present, the most extensive use of feed additives has been in poultry rations. Other changes also have been made in breeding, sanitation, and management, and these too, have contributed to the increased feed efficiency.

Economic significance of improved feeding efficiency can be illustrated by data from a Connecticut broiler study, which analyzed the effect on income of an improvement in the ration that increased output per pound of feed about 15 percent and reduced the time required to produce a 3.6 pound broiler by 8 percent. 2/ As a result of the saving in feed cost, labor, and overhead, net profit per bird was increased by 58 percent. If the time saved as a result of more rapid growth were used to produce additional lots of broilers, the net effect of this feed innovation from

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2/ These estimates are calculated from Judge, G. G., and Fellows, I. F. "Economic Interpretations of Broiler Production Problems," Conn. (Storrs) Agr. Expt. Sta. Bul. 302, July 1953.

the standpoint of an individual farmer would be a potential increase in annual income of 67 percent. But, with a widespread increase in feed efficiency, increased output would cause broiler prices to decline. With other classes of livestock, a moderate improvement in feed efficiency would not give so spectacular a rise in profits, because more rapid growth would not be so important a factor.

## Wide Variation in Feed Efficiency Among Kinds of Livestock

The approximate average level of feed conversion efficiency for 4 species of meat-producing animals is shown in table 12. Comparisons are shown with pasture both included and excluded, as in many instances feed requirements other than pasture are those of greatest concern costwise to farmers. These are average results. With good management the feed used per 100 pounds live weight produced might be as much as 50 pounds lower for each class of livestock shown.

Table 12.- Feed conversion efficiency, by species, 1949-53 1/

| Class of livestock | Feed units consumed per - 100 pounds live weight | 100 pounds meat and fat, excluding bone | 100,000 calories (food energy) | Pound of protein |
|---|---|---|---|---|
| | Pounds | Pounds | Pounds | Pounds |
| | | Including pasture | | |
| Hogs | 515 | 819 | 324 | 95 |
| Cattle and calves | 952 | 2,186 | 1,552 | 138 |
| Broilers | 359 | 674 | 834 | 34 |
| Turkeys | 543 | 885 | 740 | 44 |
| | | Excluding pasture | | |
| Hogs | 490 | 779 | 309 | 90 |
| Cattle and calves | 577 | 1,325 | 940 | 84 |
| Broilers | 359 | 674 | 884 | 34 |
| Turkeys | 518 | 828 | 706 | 42 |

1/ Preliminary estimates, Production Economics Research Branch, Agricultural Research Service, U. S. Department of Agriculture.

Reflecting recent advances in technology, broilers are seen to be the most efficient converters of feed, except in production of calories of food energy, where hogs are outstanding (fig. 7).

Beef cattle are generally the least efficient converters of feed even when pasture consumption is not included. However, they consume large quantities of hay and rough forages that would not otherwise be utilized. Turkeys rank second or third depending on the measure of output used.

With present feed conversion relationships, beef cattle must compete with other meat animals largely on the basis of consumer demand for the product and availability of low-value roughage. Hogs are the least expensive converter of feed into energy by a wide margin, but modern diets place less emphasis on energy. If hogs are not to lose ground to poultry marketwise, improvement will be needed in quality of products, in feed conversion efficiency, or in both.

Results of research indicate that improvements in feeding are possible for all classes of livestock. In light of the gains already made by poultry, the best opportunities probably exist for cattle, hogs, and sheep. Greater attention to improved feeding efficiency is an effective means by which farmers can ease the price-cost squeeze to some extent.

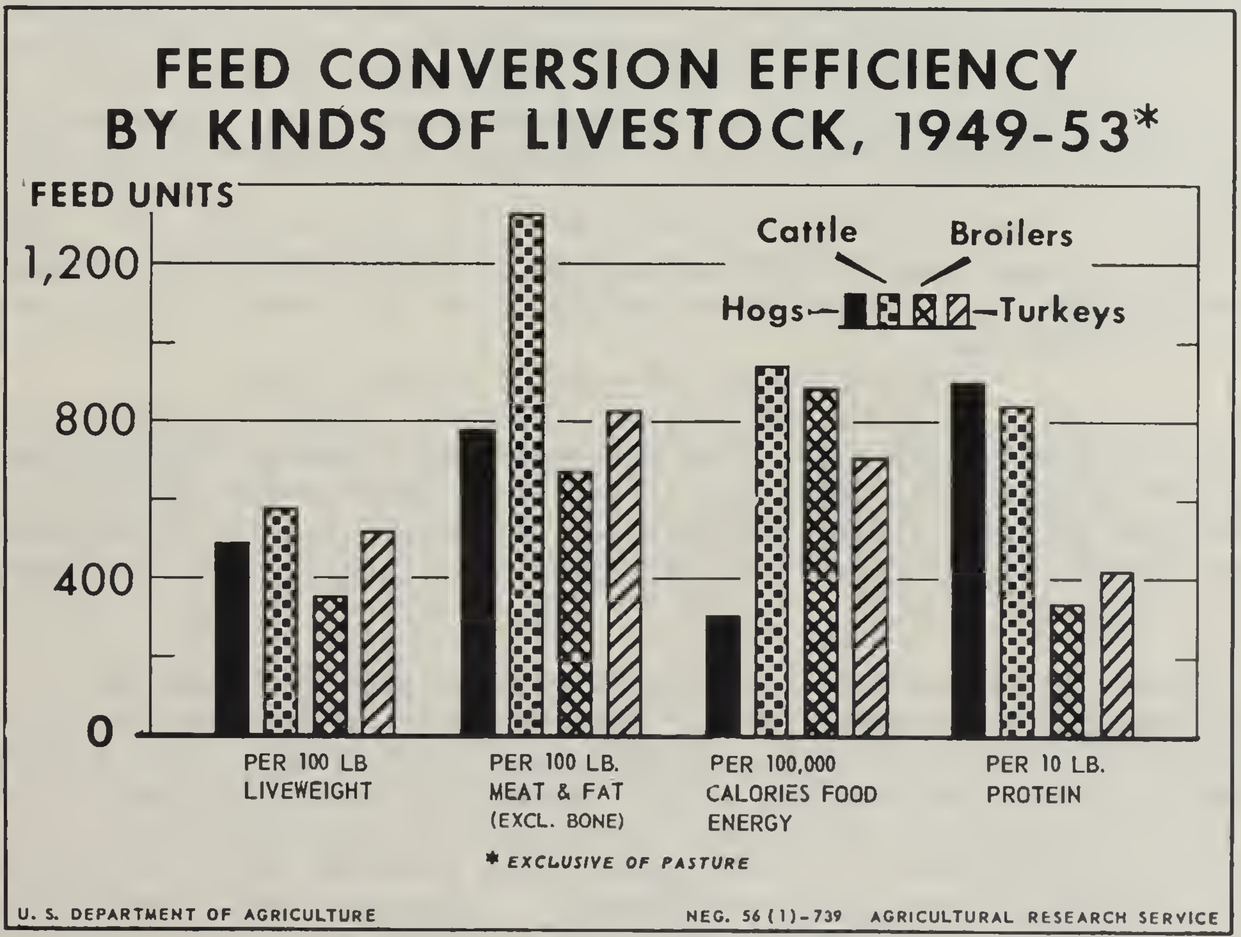

Figure 7

# HOW DOES BULK MILK HANDLING AFFECT COSTS ON DAIRY FARMS?

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Bulk handling of milk is a new and rapidly expanding technique in the dairy industry, which affects both producers and dealers directly. The facilities on the farm consist of a refrigerated tank in which the warm milk from the cow is rapidly cooled and kept cool until picked up by the hauler. Although these tanks had limited use as early as the 1930's, their use did not expand rapidly until after 1950. Today, about 20,000 tanks are in use on dairy farms in the United States and the number is increasing daily.

Bulk tanks have certain advantages and certain disadvantages as compared with the usual equipment for handling milk at the farm. These need to be understood by producers when considering a shift to bulk handling, and in adjusting to a bulk tank after it is installed.

## Costs are High, Particularly for Smaller Herds

For the present at least, the initial cost of a bulk tank will usually exceed by a substantial margin the cost of can facilities to handle the same volume. This is particularly true for the smaller dairy farms and true if the comparison is made on the commonly accepted basis of every-other-day pickup for the bulk milk, with every-day pickup for the cans. On the larger farms, the difference between the two methods becomes less important and practically disappears if the two are compared on the same frequency of pickup.

These comparisons assume new equipment for both methods. Actually, used cans and can coolers are often available at low cost, and this would widen the difference.

The basic reason for the heavier investment impact on the smaller farms can be seen in table 13. The investment cost per gallon of capacity is high for a small bulk tank, but it decreases rapidly for the larger sizes. With can facilities, the cost per gallon of capacity is relatively low for the smaller sizes, but it decreases only slightly for the larger units.

So far as annual costs are concerned, the main out-of-pocket expense usually is for electricity. The available evidence is not entirely clear, but it tends to show that many farmers can expect to use somewhat less current with bulk handling than with can facilities. Actually, however, this possible saving is slight and, on the smaller farms particularly, it is likely to be overshadowed by the higher annual overhead costs of the bulk tank resulting from the greater investment. Experience may show that this larger investment will be offset by longer life. But at present about all we can do is to assume that the annual overhead costs, largely depreciation and interest, may amount to the same percentage--perhaps 10 percent--for both types of equipment.

Table 13.- Initial cost of farm bulk tanks of different sizes

| Size of tank (gallons) | Initial cost, installed | | Initial cost per gallon |
|---|---|---|---|
| | Range | Average | |
| | Dollars | Dollars | Dollars |
| 100 | 1,000 - 1,500 | 1,250 | 12.50 |
| 150 | 1,300 - 2,000 | 1,650 | 11.50 |
| 200 | 1,700 - 2,300 | 2,000 | 10.00 |
| 250 | 1,800 - 2,400 | 2,100 | 8.40 |
| 300 | 2,100 - 3,000 | 2,400 | 8.00 |
| 400 | 2,500 - 3,200 | 2,750 | 6.90 |
| 500 | 2,700 - 3,500 | 3,000 | 6.00 |
| 600 | 3,000 - 3,900 | 3,300 | 5.50 |

On this basis, the annual overhead cost for a 100-gallon bulk tank would be around $125, more than double that for can facilities to handle the same volume. Any likely saving in electricity would be negligible compared with this difference in overhead costs. Conclusions would be similar for the larger tanks if comparisons are made on the basis of every-other-day bulk pickup and everyday can pickup. If compared on the same frequency of pickup (which is not too realistic in most cases), costs would tend to equalize for volumes requiring tanks of 300 gallons or more.

Thus it seems clear that on most farms the advantages of bulk handling must be found elsewhere than in a straight comparison of investment and operating costs for the alternative methods. Some of the other factors, both advantages and disadvantages, are discussed below.

### Saves Lifting of Cans and May Save Time

Bulk handling eliminates the job of lifting milk in cans. In addition, it may mean actual savings in time on many dairy farms. For one thing, the can-washing job at the farm--a requirement in some milksheds--is eliminated. Ordinarily, it requires considerably more time than cleaning a bulk tank. Likewise eliminated are the various can-handling operations in the milk-house and, on many farms, in moving the cans down the farm lane to a pickup point on the highway. Estimates made show that on a 2-man dairy farm these savings in time might amount to as much as an hour daily--perhaps more on some farms, certainly less on others. The important point here apparently is that, although the savings in time may be significant on many farms, it is not likely to be large enough to permit much if any reduction in the labor force. The result is more likely to be a shorter working day with no change in receipts or expenses, or an increase in volume of business within the same length of day, thereby justifying higher wages or improved working conditions. In any case, these possibilities, when combined with the reduction in heavy lifting, should make it easier for dairy farmers to attract and hold the skilled workers they need.

## Milk and Fat Losses Reduced

Ordinarily, loss of milk and butterfat because of stickage is reduced by bulk handling as compared with cans. This results from the fact that the surface area of the container is much smaller per gallon of capacity in a bulk tank than in a 10-gallon can. The extent of this saving may vary from farm to farm. It could easily amount to 1 percent in milk and perhaps even more in butterfat as there is evidence that fat tests are fractionally higher with bulk handling. Furthermore, the danger of loss from spillage is much reduced with bulk handling.

## Price Premiums and Reduced Hauling Costs

To date many, perhaps most, dairy farmers who have adopted bulk handling have received either a price premium, a reduced hauling charge, or both. The price premium has generally ranged from $0.05 to $0.25 per hundredweight of milk, and the reduced hauling charge has had nearly the same range. In a few situations, the combined premium has been as high as $0.40 per hundredweight but more commonly it has been in the neighborhood of $0.10 to $0.15. These premiums may not continue indefinitely but they have provided, and no doubt will continue to provide for some time, an incentive for producers to shift from cans to bulk handling.

An additional advantage of bulk handling is the fact that ordinarily the point of sale is on the farm. This means that the producer is not responsible for any loss of milk that might occur after the milk leaves the farm. He is also given a weight receipt at each pickup which provides him with a current check on the volume of his sales. Furthermore, the samples for butterfat tests are taken from the tank in a way that should mean more accurate tests and that also gives the producer a chance to take duplicate samples if he wishes to do so.

## Off-Flavor Milk Sometimes a Problem

Aside from somewhat higher investment and annual costs, at least on the smaller farms, a few other possible disadvantages of bulk handling to the producer have been recognized. Perhaps most important is the quality control problem in handling off-flavor milk. An entire tank of milk can be lost by off-flavor milk from 1 cow, whereas with cans the loss might be only 1 or 2 cans. Ordinarily, however, this problem is not serious. Usually, it can be handled by careful management. On most farms, it is of consequence for only a month or so in the early part of the pasture season.

## Milk Production Likely to Expand on Farms Using Bulk Tanks

Thus, it appears that at present many farmers are likely to find both investment and annual costs to be somewhat higher for bulk tanks as compared with can equipment. These higher costs plus other possible disadvantages need to be weighed against the many advantages. Some factors on both sides of the equation are intangible. The answer for any farmer will depend not only on the tangible factors as they apply to his particular situation but also on his feeling about the intangibles. Farmers who do not wish to shift to bulk handling may find themselves faced with rising costs for hauling in cans. In some instances, the producer may have no choice between adopting bulk handling and going out of dairying. In that case, assuming that the farmer stays in dairying, his main concern is how to take full advantage of this new technique in milk handling. This leads into the question of the longer run effects that bulk handling may have on dairy farming.

Bulk handling is one more step in the mechanization of dairy farming. Along with other devices, such as pipeline milkers, barn cleaners, and silo unloaders, it enables the farm labor force to produce more efficiently and helps to eliminate drudgery. These devices have generally been profitable to those farmers who have taken full advantage of them. In most instances, this has meant increased volume of production per farm and per man, which were made possible not only by mechanization but also by companion adjustments in the production of forage and in other phases of dairy farming. These devices have been less profitable to farmers who have adopted them without making the related adjustments. All dairy farmers have been affected pricewise by whatever effects these technological changes have had on overall milk production and thus on prices received.

Thus it would seem that bulk handling of milk is, and will continue to be, a contributing factor toward the longtime trend of greater production per man, per acre, and per farm on dairy farms that have the quality of resources and the management to take advantage of modern technology. At the same time, farmers who lack such resources or such know-how in management have been in a difficult competitive situation, and in many instances, they have shifted to other types of farming or to off-farm employment. These trends have been going on in all the major dairy areas, and no doubt they will continue. However, they may operate at different rates in different areas because of variation in resources and other factors. Thus they may affect the relative importance of the various dairy regions in the years ahead. Bulk handling also increases the flexibility of certain marketing operations and may permit milk to move more freely to the highest priced alternative outlet. In turn, this may also affect the location of production in the long run.

Bulk handling may likewise affect the seasonality of milk production. It seems reasonable to expect that, having made the relatively large investment required for a bulk tank, most farmers will then be interested in using the tank to as near capacity as practicable. One way to do this is to reduce the rather wide seasonal variation in production that is characteristic of most dairy farms. The bulk tank may not always provide a sufficient incentive in itself but it could be a contributing factor in a group of improved management practices, most of which tend to reduce seasonality along with their direct effects on production per cow, per man, and per farm.

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# THE FARM COST SITUATION

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

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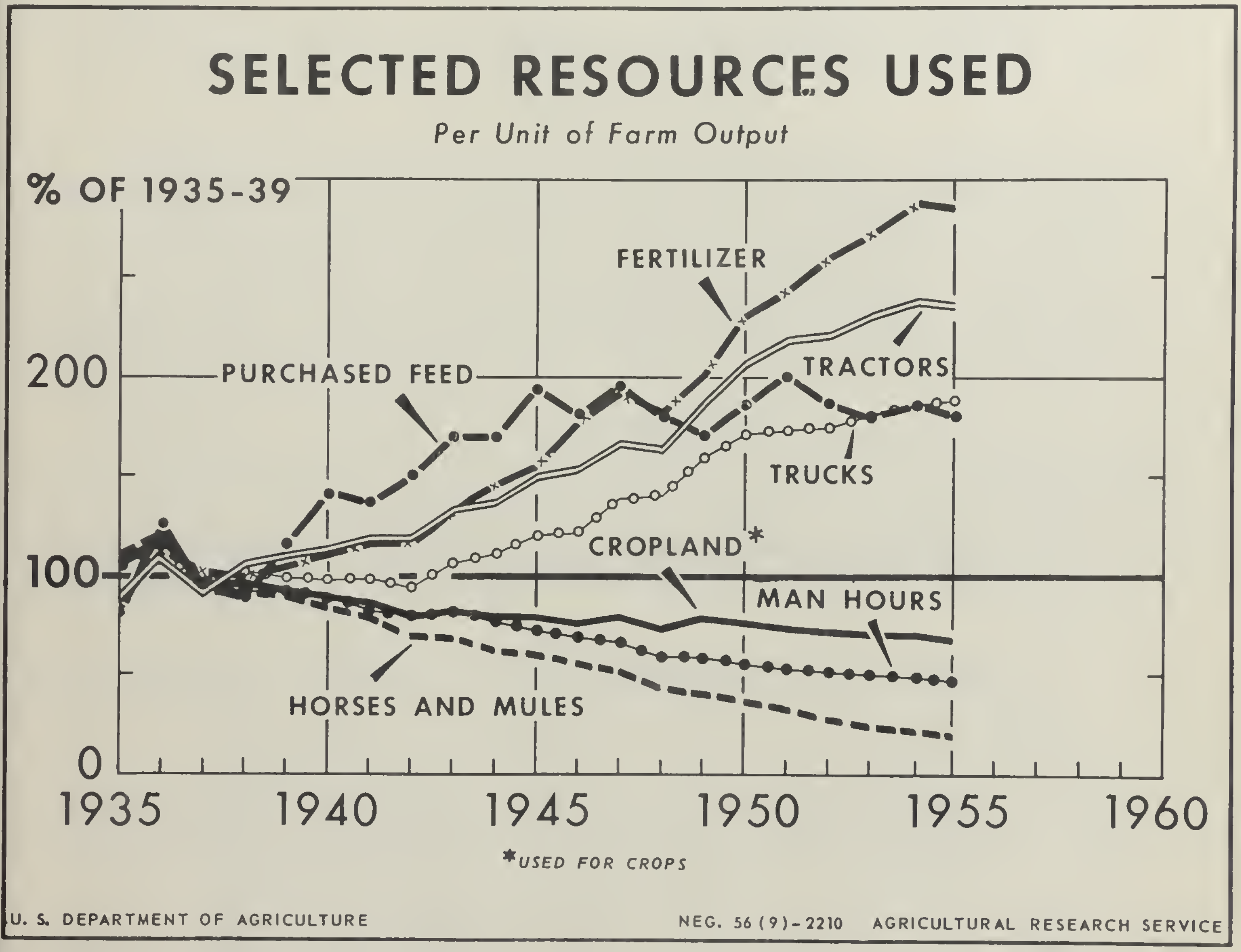
NOVEMBER 1956



SELECTED RESOURCES USED

Per Unit of Farm Output

*USED FOR CROPS

U. S. DEPARTMENT OF AGRICULTURE NEG. 56 (9)-2210 AGRICULTURAL RESEARCH SERVICE

Certain farm production factors like fertilizer and tractors have increased in relation to farm output in recent decades, whereas others like work animals and manpower have declined. Although the acreage of cropland used for crops has remained fairly stable since 1935, it too has declined in relation to farm output.

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Goods and services used in production: Cost rates and prices paid by farmers, United States

Index numbers (1947-49=100)

| Year or period | Commodities, interest, taxes, and wage rates | Commodities only | Feed | Livestock | Motor supplies | Motor vehicles | Farm machinery | Farm supplies | Building and fencing materials | Ferti-lizer | Seed | Wage rates |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1910-14 | 39 | 42 | 43 | 29 | --- | --- | 42 | 42 | 34 | 70 | 41 | 23 |
| 1915-19 | 59 | 63 | 68 | 44 | --- | --- | 54 | 70 | 48 | 101 | 62 | 34 |
| 1920-24 | 65 | 61 | 60 | 33 | --- | --- | 65 | 77 | 57 | 101 | 60 | 42 |
| 1925-29 | 65 | 61 | 58 | 44 | 94 | 49 | 64 | 73 | 54 | 92 | 60 | 43 |
| 1930-34 | 50 | 47 | 39 | 25 | 74 | 49 | 61 | 61 | 47 | 75 | 40 | 28 |
| 1935-39 | 49 | 52 | 45 | 36 | 74 | 56 | 64 | 60 | 49 | 71 | 49 | 28 |
| 1940 | 49 | 52 | 43 | 41 | 71 | 56 | 64 | 62 | 49 | 69 | 42 | 30 |
| 1941 | 53 | 55 | 47 | 46 | 74 | 59 | 65 | 66 | 53 | 69 | 40 | 35 |
| 1942 | 60 | 62 | 57 | 54 | 79 | 64 | 69 | 73 | 58 | 76 | 54 | 46 |
| 1943 | 68 | 69 | 68 | 61 | 81 | 67 | 71 | 82 | 60 | 81 | 68 | 61 |
| 1944 | 73 | 73 | 75 | 58 | 82 | 73 | 73 | 86 | 64 | 83 | 77 | 74 |
| 1945 | 77 | 74 | 74 | 63 | 82 | 75 | 74 | 87 | 66 | 84 | 79 | 83 |
| 1946 | 83 | 81 | 87 | 72 | 84 | 77 | 76 | 88 | 72 | 85 | 81 | 90 |
| 1947 | 95 | 95 | 102 | 90 | 92 | 90 | 86 | 95 | 93 | 93 | 93 | 97 |
| 1948 | 104 | 105 | 109 | 111 | 103 | 100 | 101 | 100 | 104 | 102 | 109 | 103 |
| 1949 | 101 | 100 | 89 | 99 | 105 | 110 | 113 | 105 | 103 | 105 | 98 | 100 |
| 1950 | 104 | 104 | 91 | 116 | 106 | 110 | 115 | 105 | 105 | 101 | 94 | 99 |
| 1951 | 115 | 115 | 102 | 141 | 111 | 118 | 124 | 112 | 117 | 106 | 96 | 109 |
| 1952 | 117 | 116 | 109 | 118 | 112 | 123 | 129 | 119 | 118 | 109 | 109 | 117 |
| 1953 | 112 | 106 | 98 | 83 | 114 | 122 | 130 | 120 | 118 | 110 | 100 | 119 |
| 1954 | 112 | 106 | 98 | 85 | 116 | 123 | 131 | 117 | 119 | 108 | 93 | 119 |
| 1955 | 112 | 105 | 92 | 84 | 117 | 126 | 132 | 114 | 122 | 107 | 102 | 120 |
| July | 112 | 105 | 91 | 81 | --- | 124 | --- | --- | --- | --- | --- | 119 |
| Aug. | 111 | 104 | 89 | 80 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 111 | 104 | 87 | 81 | 116 | 126 | 134 | 113 | 123 | 106 | 94 | --- |
| Oct. | 111 | 104 | 87 | 82 | --- | --- | --- | --- | --- | --- | --- | 120 |
| Nov. | 111 | 103 | 86 | 77 | --- | 129 | --- | --- | --- | --- | --- | --- |
| Dec. | 111 | 103 | 87 | 72 | 116 | 130 | 135 | 114 | 124 | --- | --- | --- |
| 1956 | | | | | | | | | | | | |
| Jan. | 112 | 104 | 87 | 78 | --- | 129 | --- | --- | --- | --- | --- | 121 |
| Feb. | 112 | 103 | 87 | 78 | --- | --- | --- | --- | --- | --- | 85 | --- |
| Mar. | 112 | 104 | 87 | 79 | 117 | 130 | 136 | 117 | 125 | --- | 85 | --- |
| Apr. | 114 | 105 | 88 | 81 | --- | --- | --- | 117 | --- | 105 | 86 | 125 |
| May | 115 | 105 | 91 | 81 | --- | --- | --- | --- | --- | --- | 86 | --- |
| June | 114 | 105 | 90 | 76 | 118 | 130 | 138 | 117 | 127 | --- | --- | --- |
| July | 113 | 105 | 90 | 76 | --- | 130 | --- | --- | --- | --- | --- | 124 |
| Aug. | 114 | 105 | 91 | 79 | --- | --- | --- | --- | --- | --- | --- | --- |
| Sept. | 115 | 106 | 91 | 80 | 120 | 131 | 141 | 117 | 128 | 106 | 90 | --- |
| Oct. | 115 | 105 | 89 | 78 | --- | --- | --- | --- | --- | --- | --- | 128 |

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# THE FARM COST SITUATION

Approved by the Outlook and Situation Board, November 15, 1956

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## GENERAL SITUATION

Farmers' production cost rates continue to rise. The index of prices paid by farmers for commodities used in production, including interest, taxes and wage rates, was 3 percent higher in mid-October than a year earlier. Prices for all groups of items comprising this index, except fertilizer, feeder livestock and seed, have increased since a year ago. Many of these increases have taken place fairly recently and some further increases are likely to occur, so that cost rates in general are expected to average somewhat higher in 1957 than in 1956.

Many of the cost changes in the last decade have been cumulative in nature. Since 1947-49, the overall index of farmers' production cost rates has risen nearly 15 percent, although prices paid for items of industrial origin, interest, taxes, and wage rates have advanced more than 30 percent. Prices paid for production items that originate on farms, however, have declined about 15 percent.

Cost rates changed from 1947-49 to 1956 about as follows:

| | | |
|---|---|---|
| Farm real estate taxes per acre | Up 56 | percent |
| Farm real estate prices | Up 40 | " |
| Farm machinery prices | Up 40 | " |
| Motor vehicle prices | Up 31 | " |
| Farm wage rates | Up 28 | " |
| Building and fencing material prices | Up 28 | " |
| Motor supply prices | Up 20 | " |
| Farm supply prices | Up 17 | " |
| Farm-mortgage interest rates | Up 10 | " |
| Fertilizer prices | Up 6 | " |
| Seed prices | Down 10 | " |
| Feed prices | Down 11 | " |
| Feeder livestock prices | Down 22 | " |

Farm cost rates expected in 1957 relative to 1956 are as follows:

Farm property taxes per acre, interest rates, farm wage rates, and prices paid for farm machinery, motor vehicles, and motor supplies are expected to be moderately higher.

Farm real estate values, and prices paid for building and fencing materials, farm supplies, feed, feeder livestock, and seed are expected to be about the same or slightly higher.

The price of fertilizer is expected to average slightly lower per ton of plant nutrients but slightly higher per ton of gross weight.

Looking Ahead 3 to 5 Years

Many of the forces that have governed farm cost rates in recent years are likely to continue to operate in the years ahead. Nonfarm employment opportunities will continue to influence the rural labor supply and farm wage rates. The expanded highway construction program may increase nonfarm employment opportunities in rural areas. Young men who are skilled operators of modern farm machinery can be readily trained to operate road-building equipment. Also, as better highways make rural areas more accessible to urban centers, they may also increase the nonfarm employment opportunities of farmers and farmworkers.

Competition for the available supply of labor, steel, and other materials used to produce farm machinery and other industrial commodities that farmers buy is likely to prevent much, if any, reduction in prices of these items. The expectation is that prices of these industrial items may increase slightly (fig. 1).

Prices of feed, feeder livestock, and seed will tend to fluctuate with prices of farm products in general. Prices of feeder cattle will depend chiefly on range conditions and prices of fat cattle. With the anticipated increase in adoption of more efficient methods of hog feeding, prices of feeder pigs are likely to increase in relation to prices received for market hogs. Prices of baby chicks and poults will probably decline somewhat in relation to prices of broilers and turkeys which were unfavorable in 1956.

Prices of farm real estate will probably continue to rise. The trend toward larger but fewer farms will go on. It will take at least several years for the size of farms to catch up with modern technology. The acreage that farm families can operate without outside help has greatly increased. Farmers whose farms are too small to fully utilize machinery and labor can be expected to bid against one another for the land that is offered for sale in their localities. Many farmers can afford to pay present prices for land if additional land will permit them to take full advantage of modern labor-saving machinery.

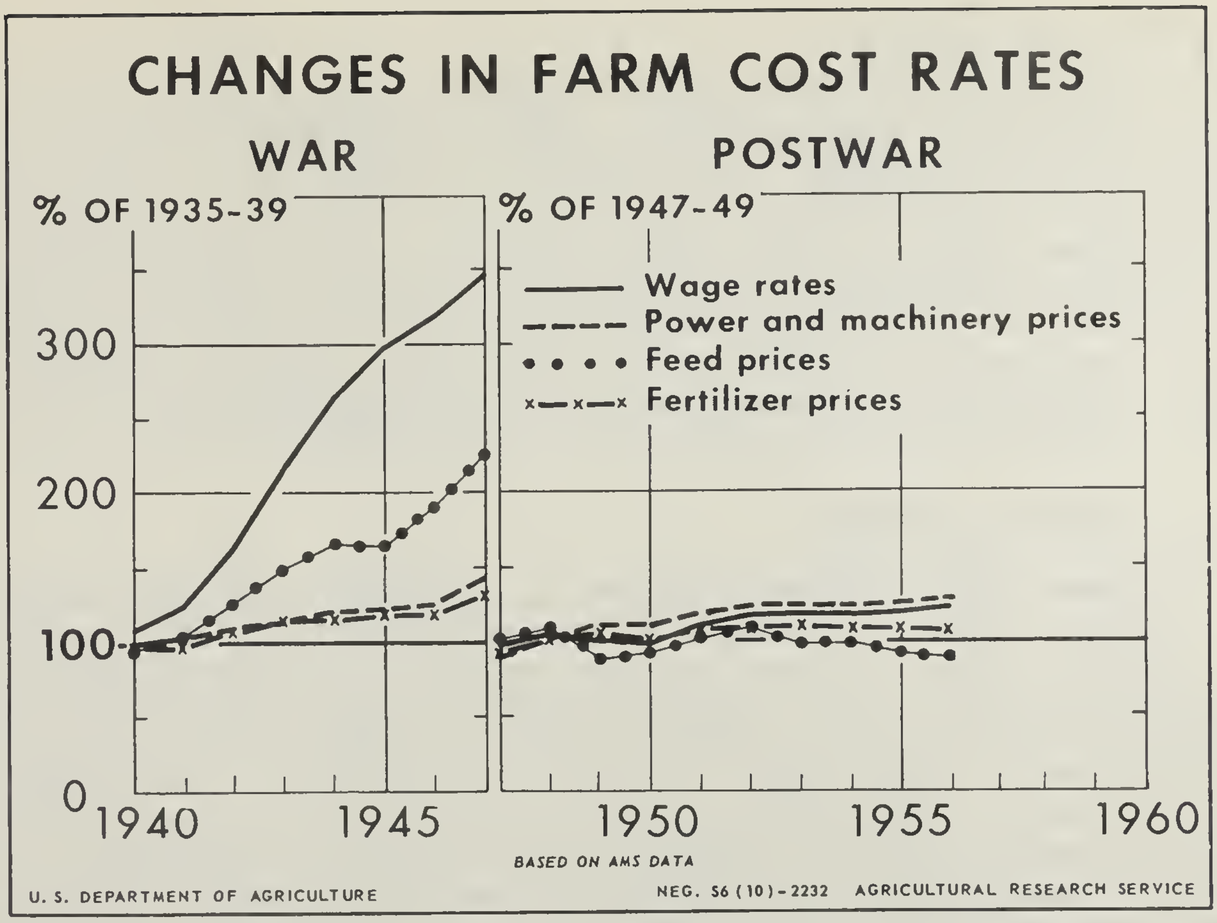

Figure 1

The Soil Bank is a new factor to be considered. It may tend to increase the demand for farmland and reduce the demand for hired labor, machinery, and certain other production items that farmers buy. If it is successful in reducing production, it will probably cause total cost per unit of output to increase because overhead items like taxes, interest, and depreciation would be spread over fewer units of output. For farm income, however, this possible increase in cost per unit of output will be offset by increases in soil bank payments and possibly by increases in prices received by farmers.

Prices paid for fertilizer per pound of plant nutrients may continue to decline. Upward trends in plant nutrient content of fertilizers and in bulk handling (dry and liquid) are expected to continue. These have contributed to the decline in plant nutrient unit costs and will continue to do so. Although the demand for fertilizer has increased quite rapidly in recent years, the facilities for manufacturing chemical fertilizers have increased even faster. This is especially true of the capacity for producing anhydrous ammonia, a relatively cheap source of nitrogen.

All of these projections or forecasts are based on the assumption of a continued high level of peacetime employment.

## Cost-Price Relationship

The relationship between farm cost rates and prices received by farmers is about the same as it was a year ago and about the same as in 1935-39 though considerably less favorable to farmers than it was in 1947-49, an unusually favorable period. Since then, prices paid by farmers for production items, interest, taxes, and wage rates have increased about 15 percent, whereas prices received by farmers for products sold have declined about 14 percent. Cost-price relationships can be expected to continue at about current levels during the next 3 to 5 years. Nevertheless, many farmers will be able to lower their per unit costs of production, thereby reducing the cost-price squeeze so far as they are concerned.

## Cost per Unit of Production

On most types of farms, cost per unit of production has increased since 1947-49 (table 1). Changes in the combination of production resources have helped to offset increases in cost rates and prices paid by farmers. But these increases in efficiency have not been sufficient to offset them completely. Dairy farmers have been more successful in keeping their per unit costs down in recent years than have the operators of most other types of farms. The fact that feed prices are lower than they were in 1947-49 is one of the reasons for this, especially in areas like the Northeast where most of the grain fed to livestock and poultry is purchased. Another reason is that land values have not increased as much in dairy areas as in areas like the Corn Belt. Also, there is considerable evidence that production efficiency increased somewhat faster on dairy farms in the last several years than it did on many other types of farms.

## Importance of Cost Items

The importance of the various production cost items varies considerably by type of farm (table 2). Feed is the most important item on dairy farms in the Northeast, whereas power and machinery are most important on wheat and Corn Belt farms. Expenditures for fertilizer and lime account for 16 percent of all production expenditures on cotton farms in the Southern Piedmont and for less than 1 percent on several other types of farms. But some farmers who used little or no commercial fertilizer 10 years ago are now using large quantities of fertilizer.

## Changes in Resources Used by Farmers

The relative quantities of various resources used in farm production are continually changing. The impact of technology, relative costs, and the financial position of farmers operate to bring about continuous adjustments in resource combinations.

Per unit of output, farmers are using fewer horses and mules, fewer acres of cropland, and fewer man-hours of labor than were used two decades ago. However, more motortrucks, tractors, fertilizer, and purchased feed are used per unit of output.

Table 1.- Cost per unit of production, commercial family-operated farms, by type, 1955, with comparisons 1/

Index numbers (1947-49=100)

| Type of farm and location | Average<br>1937-41 | Average<br>1947-49 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 2/ |
|---|---|---|---|---|---|---|---|---|
| Dairy farms: | | | | | | | | |
| Central Northeast | 49 | 100 | 94 | 102 | 115 | 107 | 101 | 96 |
| Eastern Wisconsin | 48 | 100 | 100 | 108 | 116 | 112 | 108 | 108 |
| Western Wisconsin | 45 | 100 | 96 | 104 | 110 | 103 | 103 | 98 |
| Corn Belt farms: | | | | | | | | |
| Hog-dairy | 49 | 100 | 102 | 109 | 112 | 113 | 103 | 108 |
| Hog-beef raising | 48 | 100 | 95 | 111 | 107 | 118 | 119 | 106 |
| Hog-beef fattening | 46 | 100 | 108 | 127 | 111 | 109 | 110 | 112 |
| Cash grain | 50 | 100 | 110 | 117 | 128 | 131 | 123 | 123 |
| Tobacco farms: | | | | | | | | |
| Tobacco-livestock (Kentucky) | 43 | 100 | 109 | 110 | 112 | 118 | 112 | 129 |
| Tobacco-cotton (North Carolina) | 3/ | 100 | 108 | 106 | 119 | 124 | 128 | 115 |
| Cotton farms: | | | | | | | | |
| Southern Piedmont | 44 | 100 | 115 | 103 | 115 | 105 | 119 | 96 |
| Black Prairie, Texas | 44 | 100 | 113 | 142 | 133 | 104 | 138 | 104 |
| High Plains, Texas (nonirrigated) | 44 | 100 | 110 | 125 | 189 | 356 | 125 | 135 |
| High Plains, Texas (irrigated) | 3/ | 100 | 119 | 124 | 125 | 131 | 113 | 123 |
| Spring wheat farms (No. Plains): | | | | | | | | |
| Wheat-small grain-livestock | 58 | 100 | 94 | 95 | 137 | 123 | 137 | 89 |
| Wheat-corn-livestock | 53 | 100 | 111 | 98 | 155 | 119 | 123 | 125 |
| Wheat-roughage-livestock | 78 | 100 | 106 | 110 | 162 | 104 | 125 | 101 |
| Winter wheat farms: | | | | | | | | |
| Southern Plains | 77 | 100 | 106 | 152 | 89 | 155 | 125 | 149 |
| Wheat-pea (Washington and Idaho) | 50 | 100 | 101 | 121 | 112 | 106 | 98 | 131 |
| Sheep ranches: | | | | | | | | |
| Northern Plains | 47 | 100 | 105 | 110 | 132 | 112 | 121 | 117 |
| Southwest | 3/ | 100 | 115 | 147 | 147 | 143 | 137 | 124 |
| Cattle ranches: | | | | | | | | |
| Northern Plains | 56 | 100 | 120 | 119 | 126 | 114 | 114 | 120 |
| Intermountain region | 44 | 100 | 123 | 119 | 128 | 129 | 123 | 120 |
| Southwest | 3/ | 100 | 110 | 136 | 167 | 142 | 149 | 126 |

1/ Including charges for capital and unpaid labor. 2/ Preliminary. 3/ Not available.

Table 2.- Distribution of cash farm expenditures, specified types of farms, 1955

| Type of farm | Power and machinery 1/ | Hired labor 2/ | Fertilizer and lime | Feed and seed 3/ | Live-stock | Buildings and fences | Taxes | Other |
|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Dairy farms: | | | | | | | | |
| Central Northeast | 27 | 8 | 4 | 37 | 3 | 7 | 8 | 6 |
| Eastern Wisconsin | 44 | 5 | 4 | 19 | 1 | 10 | 7 | 10 |
| Western Wisconsin | 41 | 6 | 4 | 21 | 1 | 9 | 9 | 9 |
| Corn Belt farms: | | | | | | | | |
| Hog-dairy | 36 | 9 | 5 | 24 | 1 | 9 | 8 | 8 |
| Hog-beef raising | 36 | 7 | 4 | 28 | 1 | 6 | 11 | 7 |
| Hog-beef fattening | 19 | 5 | 2 | 18 | 41 | 5 | 6 | 4 |
| Cash grain | 44 | 6 | 11 | 14 | 1 | 6 | 15 | 3 |
| Tobacco farms: | | | | | | | | |
| Tobacco-livestock (Kentucky) | 29 | 22 | 14 | 10 | -- | 8 | 12 | 5 |
| Tobacco-cotton (North Carolina) | 23 | 36 | 13 | 8 | -- | 9 | 2 | 9 |
| Cotton farms: | | | | | | | | |
| Southern Piedmont | 36 | 29 | 16 | 7 | 1 | 5 | 2 | 4 |
| Black Prairie, Texas | 48 | 30 | 2 | 8 | -- | 4 | 3 | 5 |
| High Plains, Texas (nonirrigated) | 66 | 17 | -- | 7 | 1 | 2 | 5 | 2 |
| High Plains, Texas (irrigated) | 56 | 28 | 2 | 3 | -- | 4/ 8 | 2 | 1 |
| Spring wheat farms (Northern Plains): | | | | | | | | |
| Wheat-small grain-livestock | 66 | 10 | 1 | 4 | 1 | 7 | 9 | 2 |
| Wheat-corn-livestock | 58 | 8 | -- | 9 | 2 | 6 | 11 | 6 |
| Wheat-roughage-livestock | 66 | 4 | -- | 12 | 1 | 6 | 9 | 2 |
| Winter wheat farms: | | | | | | | | |
| Southern Plains | 56 | 6 | 2 | 13 | 1 | 6 | 12 | 4 |
| Wheat-pea (Washington and Idaho) | 52 | 13 | 10 | 5 | -- | 4 | 9 | 7 |
| Sheep ranches: | | | | | | | | |
| Northern Plains | 21 | 25 | -- | 25 | 6 | 2 | 10 | 11 |
| Southwest | 15 | 13 | -- | 23 | 27 | 6 | 8 | 8 |
| Cattle ranches: | | | | | | | | |
| Northern Plains | 44 | 14 | -- | 6 | 6 | 3 | 14 | 13 |
| Intermountain region | 33 | 12 | -- | 25 | 5 | 3 | 19 | 3 |
| Southwest | 23 | 7 | -- | 33 | 13 | 7 | 10 | 7 |

1/ Including ginning, hauling, and other machine work hired. 2/ Including payments to croppers. 3/ Including cost of grazing permits. 4/ Including irrigation wells and water-distribution systems.

Substitution of one resource for another has typified agriculture in the United States during the last two decades. Tractors, trucks, and other farm machinery have been substituted for horse and mule power and for labor. As labor becomes increasingly productive in our highly industrialized economy, nonfarm wage rates go up and industry competes more strongly for farmworkers. On the other side, technology contributes to continued improvement in machinery and other nonfarm resources. The farmer soon finds that it is cheaper to buy machinery than to use hired labor in getting his work done. Other inputs, such as fertilizer, improved feeds, and the gamut of technological advances are used also. Thus, requirements for human labor are reduced both in total and per unit of output. The price of fertilizer has not increased as much as prices of other inputs, particularly since World War II. As a result, some farmers may find it more profitable to increase production by using more fertilizer than by purchasing or renting more of the limited supply of cropland.

These trends reflect the increasing interdependency of the agricultural and industrial sectors of our economy. Farmers are increasing their purchases of industry-produced goods and services.

The continuous recombining of resources and discarding of the old to incorporate the new are methods whereby farmers adapt their farm businesses to the changing world and the growing economy. In so doing, they are able to produce more, minimize the drudgery of farmwork, and improve their levels of living. Resource substitution is a compelling force in American agriculture. There is little reason to doubt that this process of substitution and adjustment will continue as the technological and economic forces that cause them continue to unfold.

## FARM LABOR

Farm wage rates have averaged about 4 percent higher in 1956 than in 1955. This is the sharpest rise in farm wage rates since 1952; it compares with an average annual increase of less than 1 percent for the period 1952-55 (table 3). Farm wage rates are now about a fourth above 1947-49 and 300 percent above 1940 levels.

Farmers are paying higher rates for hired labor this year in all regions. The range is from 6 percent higher in the New England States to 2 percent higher in the Mountain States. Higher wage rates in industry and abundant opportunities for nonfarm jobs are prime factors behind the increase in farm wage rates. The new minimum industrial wage rate of $1.00 per hour that became effective March 1, 1956, probably affected indirectly the wage rates paid by farmers.

Higher farm wage rates are expected in 1957. Competition from nonfarm employers for farm workers is expected to continue. Seasonal farmworkers, particularly, will be attracted to industrial jobs, not only by higher wages, but also by such inducements as greater continuity of employment and better working and living conditions.

Table 3.- Labor used on farms, labor productivity, wage rates, and related data, United States, 1940-56 1/

Index numbers (1947-49=100)

| Year | Farm employment | | | Man-hours of farm work 3/ | Farm output 4/ | Farm output per man-hour | Gross farm income per man-hour | Farm wage rates 5/ |
|---|---|---|---|---|---|---|---|---|
| | Total 2/ | Family 2/ | Hired | | | | | |
| 1940 | 107 | 104 | 117 | 120 | 83 | 69 | 28 | 30 |
| 1941 | 104 | 101 | 116 | 117 | 86 | 74 | 35 | 35 |
| 1942 | 103 | 100 | 112 | 122 | 96 | 79 | 46 | 46 |
| 1943 | 102 | 101 | 107 | 121 | 94 | 78 | 58 | 61 |
| 1944 | 100 | 100 | 98 | 120 | 97 | 81 | 61 | 74 |
| 1945 | 98 | 99 | 93 | 112 | 96 | 86 | 69 | 83 |
| 1946 | 101 | 102 | 96 | 108 | 98 | 91 | 81 | 90 |
| 1947 | 102 | 102 | 99 | 103 | 95 | 92 | 99 | 97 |
| 1948 | 101 | 101 | 102 | 100 | 104 | 104 | 103 | 103 |
| 1949 | 97 | 97 | 99 | 97 | 101 | 104 | 98 | 100 |
| 1950 | 91 | 91 | 91 | 89 | 100 | 112 | 108 | 99 |
| 1951 | 88 | 88 | 87 | 91 | 103 | 113 | 122 | 109 |
| 1952 | 85 | 85 | 84 | 89 | 107 | 120 | 125 | 117 |
| 1953 | 84 | 84 | 85 | 88 | 108 | 123 | 120 | 119 |
| 1954 | 83 | 82 | 84 | 86 | 108 | 126 | 119 | 119 |
| 1955 | 80 | 79 | 83 | 85 | 112 | 132 | 116 | 120 |
| 1956 6/ | 78 | 78 | 81 | 84 | 113 | 135 | 120 | 125 |

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1/ Data on farm employment, wage rates, and farm income are from the Agricultural Marketing Service, United States Department of Agriculture.

2/ Includes farm operators and members of their families.

3/ Total man-hours of farmwork in terms of the time required by average adult male workers.

4/ Net calendar-year production for eventual human use.

5/ Simple average of seasonally adjusted quarterly indexes.

6/ Preliminary. Estimates of farm output and man-hours for 1956 based on October 1956 "Crop Production" report and other releases of the Agricultural Estimates Division, Agricultural Marketing Service.

Farmers in some areas have not been able to get all the help they wanted in brief periods, but the supply of labor this year has generally been sufficient to enable farmers to get their work done. The supply of experienced year-round workers continued tight and a similar situation is expected in 1957. The average number of workers employed on farms has continued to decrease. Since 1947-49, the reduction has been slightly less for hired than for family workers.

Last year more than 410,000 foreign workers from Mexico, British West Indies, and Canada were brought in at various times for seasonal farmwork. Of this number, the period of heaviest employment was late in October when about 240,000 were working on farms in this country. Greater numbers of foreign workers have been contracted so far this year than for the corresponding period last year. Many of the additional Mexican Nationals contracted in the last few years were for jobs formerly filled by workers who entered illegally. Strict control to prevent illegal entry is being maintained. Foreign workers are expected to be available next year in areas certified as having an insufficient supply of seasonal workers from domestic sources.

Hired labor is a more important item of cost on some types of farms than on others (table 4). The annual cost of hired labor in 1955 on commercial family-operated farms of average size ranged from less than $225 a year on wheat-roughage-livestock farms in the Northern Plains to more than $4,000 a year on irrigated cotton farms in the High Plains area of Texas.

With advances in technology and increases in farm wage rates, there has been a tendency to substitute machinery for labor on all types of farms. However, the value of machinery used in relation to total hours of labor used is still relatively low on cotton farms in the Southern Piedmont (fig. 2). Roughly half of the increase from 1940 to 1955 in the value of machinery per hour of labor is due to increases in machinery prices.

## FARM POWER AND MACHINERY

Prices paid by farmers for farm machinery and motor vehicles were about 5 percent higher in mid-September than a year earlier and about a third higher than in 1947-49. They are expected to be higher in 1957 than they were for the greater part of 1956.

Changes in retail prices of farm machinery tend to follow changes in wholesale prices. Wholesale prices of farm machinery, including tractors, have risen about 26 percent since 1947-49 (table 5). They were about the same in 1945 as in 1926. From 1945 to January 1, 1951, these prices increased by about 55 percent. After 1951, wholesale prices of agricultural machinery varied but little until September 1955, when prices increased by about 4 percent. Recently, several major farm machinery companies have increased their prices, and it is expected that the increase in wholesale prices will be about the same as that of a year earlier.

Table 4.- Average cost of hired labor, specified types of commercial family-operated farms, 1955, with comparisons

| Type of farm and location | Labor hired per farm 1/ | | | Cost per farm 2/ | | | Cost per hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1937-41 | 1947-49 | 1955 3/ | 1937-41 | 1947-49 | 1955 3/ | 1937-41 | 1947-49 | 1955 3/ |
| | Hours | Hours | Hours | Dollars | Dollars | Dollars | Cents | Cents | Cents |
| Dairy farms: | | | | | | | | | |
| Central Northeast | 1,790 | 1,200 | 710 | 286 | 563 | 480 | 16 | 47 | 68 |
| Eastern Wisconsin | 750 | 850 | 520 | 130 | 374 | 248 | 17 | 44 | 48 |
| Western Wisconsin | 560 | 480 | 490 | 86 | 249 | 236 | 15 | 52 | 48 |
| Corn Belt farms: | | | | | | | | | |
| Hog-dairy | 1,130 | 870 | 580 | 268 | 644 | 534 | 24 | 74 | 92 |
| Hog-beef raising | 490 | 440 | 260 | 104 | 299 | 229 | 21 | 68 | 88 |
| Hog-beef fattening | 870 | 710 | 670 | 203 | 543 | 633 | 23 | 76 | 94 |
| Cash grain | 750 | 550 | 470 | 186 | 383 | 436 | 25 | 70 | 93 |
| Tobacco farms: | | | | | | | | | |
| Tobacco-livestock (Kentucky) | 1,450 | 1,380 | 1,090 | 229 | 647 | 577 | 16 | 47 | 53 |
| Tobacco-cotton (North Carolina) | 4/ | 4,250 | 3,880 | 4/ | 1,472 | 1,652 | 4/ | 35 | 43 |
| Cotton farms: | | | | | | | | | |
| Southern Piedmont | 2,320 | 1,550 | 1,960 | 147 | 408 | 798 | 6 | 26 | 41 |
| Black Prairie, Texas | 1,780 | 2,360 | 1,640 | 207 | 1,125 | 1,100 | 12 | 48 | 67 |
| High Plains, Texas (nonirrigated) | 2,040 | 2,580 | 1,210 | 476 | 2,113 | 801 | 23 | 82 | 66 |
| High Plains, Texas (irrigated) | 4/ | 4,680 | 5,730 | 4/ | 4,196 | 4,256 | 4/ | 90 | 74 |
| Spring wheat farms (Northern Plains): | | | | | | | | | |
| Wheat-small grain-livestock | 1,000 | 950 | 640 | 261 | 868 | 605 | 26 | 91 | 95 |
| Wheat-corn-livestock | 590 | 690 | 480 | 118 | 514 | 377 | 20 | 74 | 79 |
| Wheat-roughage-livestock | 430 | 460 | 230 | 113 | 421 | 221 | 26 | 92 | 96 |
| Winter wheat farms: | | | | | | | | | |
| Southern Plains | 810 | 660 | 330 | 169 | 509 | 301 | 21 | 77 | 91 |
| Wheat-pea (Washington and Idaho) | 1,790 | 1,160 | 1,020 | 528 | 1,110 | 1,316 | 29 | 96 | 129 |
| Sheep ranches: | | | | | | | | | |
| Northern Plains | 2,520 | 3,070 | 3,980 | 490 | 1,900 | 2,973 | 19 | 62 | 75 |
| Southwest | 4/ | 3,150 | 2,650 | 4/ | 1,678 | 1,568 | 4/ | 53 | 59 |
| Cattle ranches: | | | | | | | | | |
| Northern Plains | 500 | 780 | 1,220 | 79 | 423 | 843 | 16 | 54 | 69 |
| Intermountain region | 60 | 740 | 840 | 10 | 428 | 701 | 17 | 58 | 83 |
| Southwest | 4/ | 1,490 | 1,010 | 4/ | 672 | 536 | 4/ | 45 | 53 |

1/ Includes cropper labor. 2/ Includes croppers' share of crops and value of perquisites furnished.
3/ Preliminary. 4/ Not available.

Table 5.- Numbers of specified machines and horses and mules on farms, January 1, and prices of agricultural machinery, gasoline, and tires, 1940-56

Index numbers (1947-49=100)

| Year | Numbers on farms 1/ | | | | | Prices | | |
|---|---|---|---|---|---|---|---|---|
| | Farm tractors 2/ | Motor-trucks | Grain combines | Corn pickers | Horses and mules 3/ | Agricultural machinery, including tractors 4/ | Gasoline 5/ | Tires 5/ |
| 1940 | 54 | 55 | 35 | 36 | 156 | 69 | 74 | 73 |
| 1941 | 58 | 58 | 42 | 40 | 152 | 69 | 78 | 75 |
| 1942 | 65 | 61 | 51 | 43 | 147 | 72 | 81 | 93 |
| 1943 | 72 | 68 | 59 | 46 | 142 | 72 | 81 | 103 |
| 1944 | 76 | 73 | 64 | 48 | 136 | 72 | 81 | 108 |
| 1945 | 83 | 79 | 69 | 56 | 128 | 72 | 81 | 104 |
| 1946 | 87 | 82 | 78 | 67 | 119 | 77 | 83 | 105 |
| 1947 | 92 | 90 | 86 | 78 | 109 | 90 | 92 | 101 |
| 1948 | 99 | 101 | 99 | 99 | 100 | 101 | 103 | 101 |
| 1949 | 109 | 109 | 115 | 123 | 91 | 109 | 105 | 98 |
| 1950 | 119 | 117 | 132 | 151 | 84 | 111 | 106 | 110 |
| 1951 | 129 | 122 | 150 | 173 | 76 | 120 | 107 | 131 |
| 1952 | 137 | 128 | 164 | 195 | 66 | 121 | 108 | 125 |
| 1953 | 144 | 133 | 172 | 209 | 58 | 122 | 112 | 123 |
| 1954 | 149 | 138 | 179 | 219 | 52 | 122 | 113 | 123 |
| 1955 | 152 | 143 | 181 | 228 | 46 | 123 | 114 | 120 |
| 1956 6/ | 156 | 148 | 185 | 232 | 43 | 126 | 7/ 117 | 7/ 118 |

1/ The 1947-49 average for tractors (excluding garden tractors) was 2,852,000; for motortrucks, 1,888,000, for grain combines, 540,000; for cornpickers, 302,000; and for horses and mules all ages, 9,302,000.

2/ Excluding garden tractors.

3/ Based on data published in Livestock and Poultry on Farms and Ranches, January 1 (AMS).

4/ Wholesale prices of agricultural machinery, including tractors, as reported by the Bureau of Labor Statistics.

5/ Based on prices paid by farmers as reported in Agricultural Prices (AMS). The 1947-49 average for gasoline (per gallon) was $0.254, and for tires (size 6.70x15), $18.70.

6/ Preliminary.

7/ Average prices paid in March, June, and September.

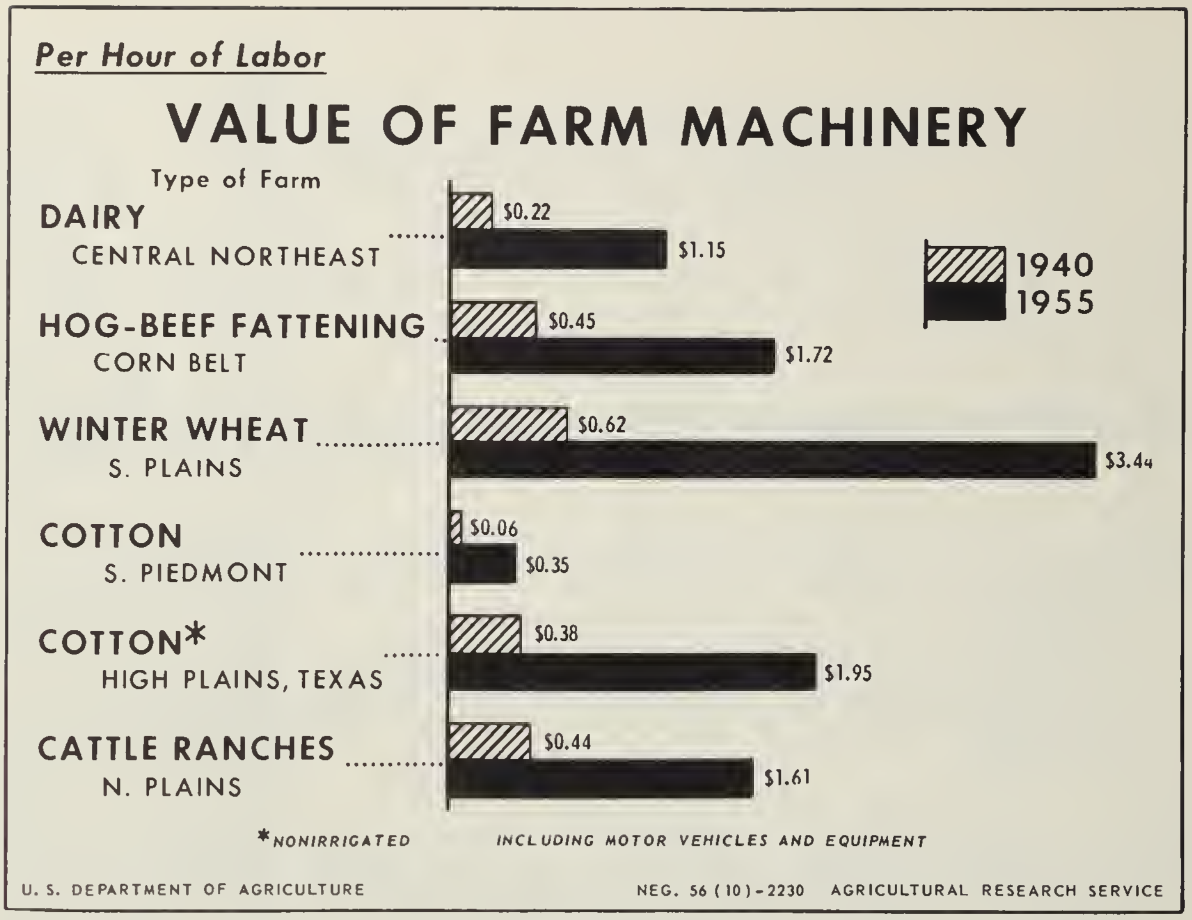

Figure 2.

In recent years, when supplies of machinery have been larger in relation to demand, dealers in many areas have tended to dispose of machines and equipment at less than the regular list prices. This is frequently done by allowing more than the market value for "trade-ins." These tendencies have been most extensively followed in depressed agricultural areas, especially drought areas, and they can be expected to continue in the year ahead.

Domestic shipments of farm machinery and equipment in the current season will likely be about 20 percent below the 1955 level. Volume of farmers' purchases of machines and equipment in 1956 may well be the lowest in a decade. This is partly because farm incomes have been low in recent years and partly because farmers in general are well supplied with machinery and equipment. The latter is especially true in areas where the soil bank program will substantially reduce the acreage of cropland to be harvested.

Farmers' purchases of machinery have been relatively large for more than 10 years, and their inventories of tractors and other machinery and equipment have steadily increased. Since 1940, numbers of tractors and motortrucks on farms have about tripled. Numbers of grain combines, cornpickers, pick-up balers, milking machines, field forage harvesters and cotton harvesters have increased percentagewise substantially more than numbers of tractors (fig. 3). Increases in numbers of tractors and

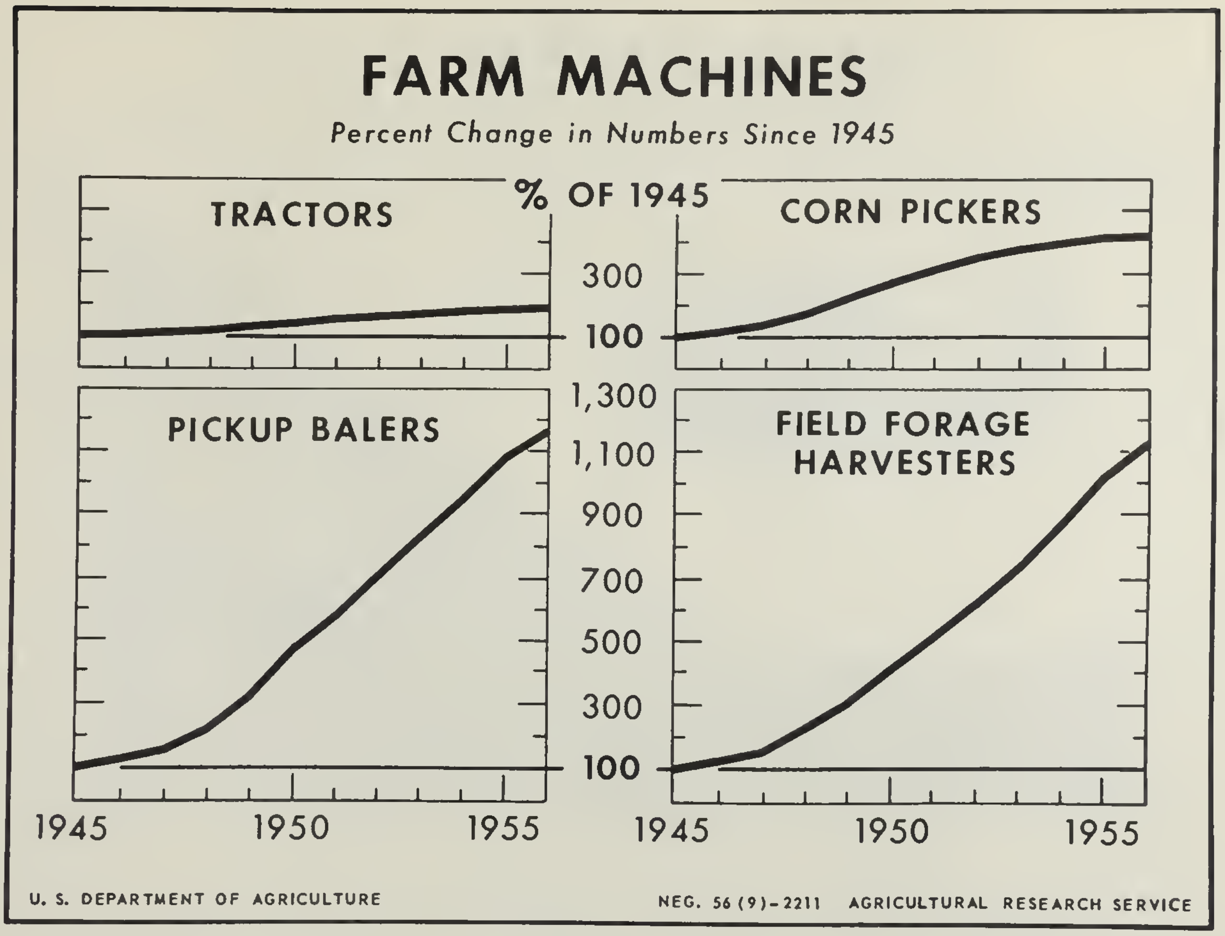

Figure 3

many other machines have been accompanied by reductions in numbers of work-animals and animal-drawn machines and equipment. Increased mechanization also has resulted in decreased manpower.

The number of horses and mules of all classes and ages now on farms is less than 15 percent of the number in 1920. In most farming areas, mechanical power has almost completely replaced horses and mules. In consequence, the annual rate of increase in numbers of tractors and principal machines on farms has slowed materially in recent years.

Most of the current purchases of tractors and power machines are made to replace worn and obsolete tractors and tractor-drawn machines. This outlet - the replacement market - will increase in importance in the years ahead (fig. 4).

Along with the reduced rate of increase of recent years in numbers of tractors and machines on farms, there has been a decided shift toward larger tractors and complementary tractor equipment. About 80 percent of the current domestic shipments of wheel tractors for farm use have belt h.p. ratings of 30 or more. Less than 25 percent of the 1947 domestic shipments were of these ratings. Farmers are adding additional acreages to their farms so they can use larger equipment economically. Expanded use of larger power equipment and custom machines can be expected to continue for some years.

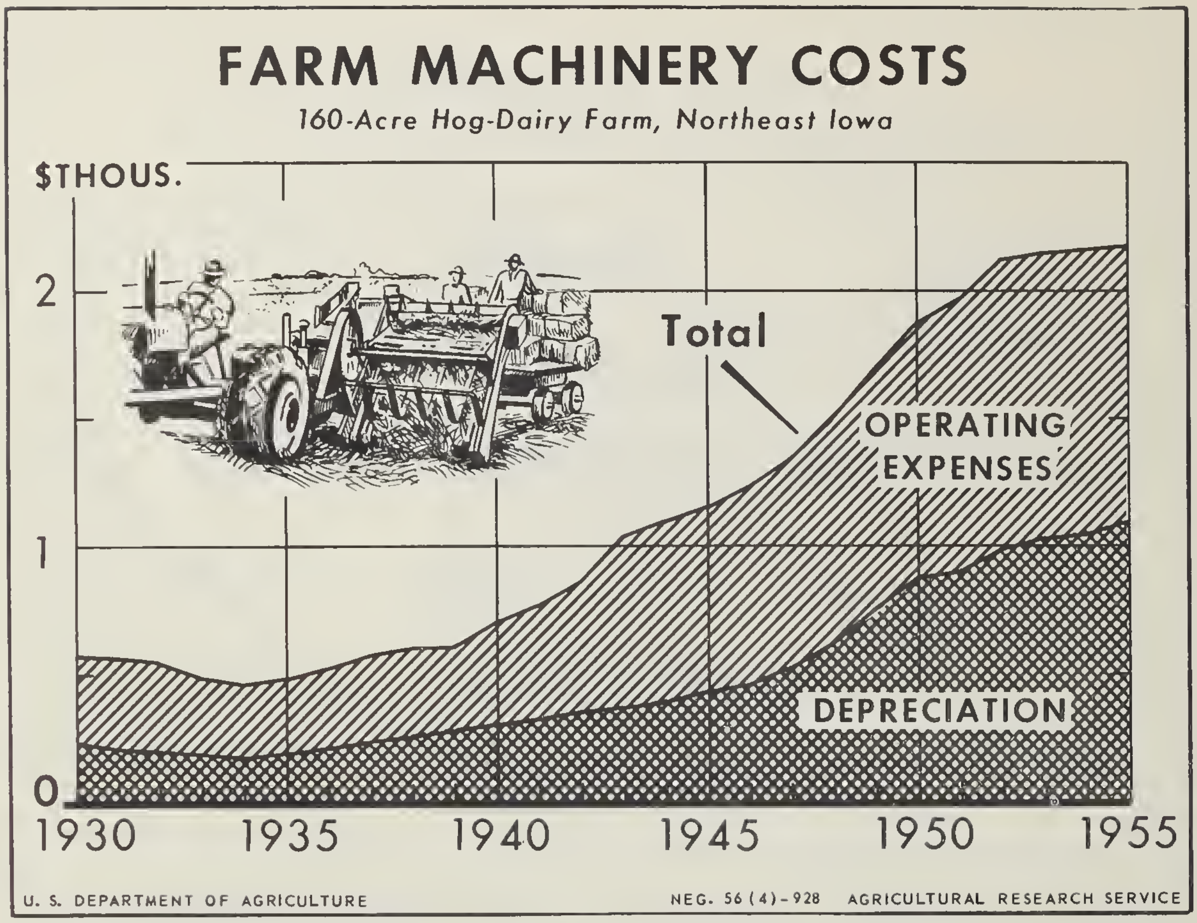

Figure 4

The cost of gasoline is an important item of farm expenditures. Annual farm consumption of motor fuel is currently estimated at about 7 billion gallons. About 90 percent of all motor fuel is gasoline. Current retail prices of gasoline at filling stations is about 3 percent above the previous high 1955 price. It is estimated that farmers use around 3 billion gallons of gasoline for off-highway farm uses. Since January 1, 1956, farmers have been able to obtain a rebate of the Federal tax of 2 cents a gallon for gasoline use for off-highway farm purposes. With the tax rebate, the cost per gallon of gasoline in 1956 was about 10 percent above the average price of 1947-49.

About 11 million motor vehicles and numerous farm machines are adapted for use with rubber tires. Prices of tires were at peak levels in 1951 but have since declined moderately. It is likely that retail prices of tires will show little change in the coming year.

## FEED

The index of prices paid by farmers for feed was about 2 percent higher in mid-October than a year earlier. Prices of soybean and linseed meals were down 8 to 10 percent but prices of other high-protein feeds were about the same. Prices of feed grains, broiler mash, mixed dairy feed, and hay were up a little.

The index of prices received by farmers for feed grains and hay in mid-October was about 6½ percent above a year earlier. Corn was up 4 percent; oats, 17 percent; barley, 8 percent; sorghum grains, 27 percent; and hay 5 percent. Prices of the small grains have readjusted somewhat from the low levels following the large 1955 crops. The price of hay was considerably higher in States where drought was severe.

Feed grain prices may average a little higher in the 1956-57 season (October-September) than in the 1955-56 season, but prices of high protein feeds are expected to average lower. Total supplies of feed concentrates are about the same, although production of feed grains in 1956 was about 4 percent less than in 1955 (table 6). The supply of oilseed meals is expected to be about 8 percent above the previous high reported for the 1955-56 season. The supply of other byproduct feeds is expected to be about the same as a year ago. The supply of feed grains is larger this fall than a year earlier in the North Atlantic, South Atlantic, and East North Central regions, about the same in the West North Central region, and much smaller in the South Central and Western regions where supplies in 1955 were unusually large.

The number of grain-consuming animal units for the 1956-57 season is expected to be down about 2 percent from that of a year earlier. The decrease will be principally in hogs, as animal units of poultry and beef cattle may be as large or larger. The supply of feed concentrates per animal unit is the largest on record.

The number of roughage-consuming livestock for 1956-57 is expected to be about the same as for 1955-56. The supply of hay is larger in all regions, except the South Central and West North Central regions. On November 1, severe drought existed in an area extending from Iowa and Nebraska south to the Gulf of Mexico and west to Arizona and Utah. Extreme drought conditions prevailed in most of Kansas, Missouri, Oklahoma, and Texas.

Returns per $1.00 of feed cost were lower on October 15 than a year earlier for all poultry enterprises, chiefly because of lower prices of poultry and eggs (table 7). Returns were lower from butterfat production and beef raising because of higher feed costs. Hog raising was the only livestock enterprise that showed larger returns per $1.00 of feed on October 15, 1956, than a year previous. Compared with averages for the 15-year period, 1937-51, returns per $1.00 of feed cost were lower on October 15 for all livestock enterprises. Returns from broilers, eggs, and butterfat were down 25 percent or more while returns from milk and hogs were down 6 and 9 percent respectively.

Table 6.- Supply and utilization of feed concentrates, and livestock fed, United States, 1937-56 1/

| Year beginning October | Supply | | | | Utilization | | Stocks of feed grains, end of year 3/ | Grain-consuming animal units fed | Per grain-consuming animal unit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stocks of feed grains beginning of year | Production of feed grains | Other feed concentrates 2/ | Total supply | For seed, human food, industry, and export | Concentrates fed to livestock | | | Production of feed grains | Supply of concentrates | Concentrates fed |
| | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million tons | Million units | Tons | Tons | Tons |
| Av. 1937-41 | 16.9 | 99.3 | 19.9 | 136.1 | 12.1 | 104.9 | 19.9 | 153.1 | 0.65 | 0.89 | 0.69 |
| Av. 1942-46 | 14.7 | 117.3 | 29.4 | 161.4 | 14.8 | 133.0 | 13.5 | 176.9 | .66 | .91 | .75 |
| 1948........ | 7.8 | 135.4 | 23.6 | 166.8 | 17.6 | 119.8 | 30.4 | 158.6 | .85 | 1.05 | .76 |
| 1949........ | 30.4 | 120.0 | 24.9 | 175.3 | 17.2 | 126.4 | 30.5 | 163.8 | .73 | 1.07 | .77 |
| 1950........ | 30.5 | 121.8 | 26.5 | 178.8 | 20.3 | 130.3 | 28.6 | 168.1 | .72 | 1.06 | .78 |
| 1951........ | 28.6 | 113.1 | 27.5 | 168.9 | 17.1 | 132.2 | 20.1 | 167.3 | .68 | 1.01 | .79 |
| 1952........ | 20.1 | 119.7 | 27.3 | 167.1 | 17.0 | 121.8 | 27.0 | 158.8 | .75 | 1.05 | .77 |
| 1953........ | 27.0 | 117.5 | 28.0 | 172.5 | 16.2 | 125.8 | 31.7 | 156.7 | .75 | 1.10 | .80 |
| 1954........ | 31.7 | 123.9 | 26.6 | 182.2 | 18.7 | 126.4 | 39.1 | 161.5 | .77 | 1.13 | .78 |
| 1955........ | 39.1 | 131.1 | 26.4 | 196.9 | 20.6 | 131.7 | 43.2 | 164.9 | .80 | 1.19 | .80 |
| 1956 4/..... | 43.2 | 126.2 | 27.3 | 196.8 | 20.0 | 130.0 | 47.0 | 162.0 | .78 | 1.21 | .80 |

1/ From Feed Statistics, page 2, March 1955, and Feed Situation, November 1956, table 2, AMS.

2/ Includes byproduct feeds, imported grains, and domestic wheat and rye fed.

3/ Stocks do not necessarily equal supply less feed and other utilization because of a difference in the crop year for different feed grains.

4/ Preliminary estimates based on indications in October 1956.

Table 7.- Returns per $1.00 of feed cost of livestock enterprises, United States, October 15, 1956, with comparisons 1/

| Livestock enterprise or product | 1937-51 average Oct. | Oct. 15, 1954 | Oct. 15, 1955 | Apr. 15, 1956 | Oct. 15, 1956 |
|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars |
| Eggs | 2.09 | 1.22 | 1.78 | 1.57 | 1.54 |
| Broilers | 1.62 | 1.24 | 1.51 | 1.39 | 1.18 |
| Turkeys | 1.85 | 1.50 | 1.91 | 1.85 | 1.54 |
| Milk | 2.25 | 1.93 | 2.12 | 1.83 | 2.11 |
| Butterfat | 1.75 | 1.28 | 1.41 | 1.36 | 1.32 |
| Hogs | 1.75 | 1.56 | 1.54 | 1.34 | 1.60 |
| Sheep raising | 1.68 | 1.28 | 1.28 | 1.28 | 1.28 |
| Beef raising | 1.82 | 1.41 | 1.59 | 1.46 | 1.53 |
| Cattle feeding | 2/1.25 | 1954-55<br>1.19 | | 1955-56<br>1.15 | |
| | Index numbers (1937-51=100) | | | | |
| Eggs | 100 | 58 | 85 | 106 | 74 |
| Broilers | 100 | 77 | 93 | 85 | 73 |
| Turkeys | 100 | 86 | 103 | 106 | 83 |
| Milk | 100 | 86 | 94 | 100 | 94 |
| Butterfat | 100 | 73 | 81 | 91 | 75 |
| Hogs | 100 | 89 | 88 | 85 | 91 |
| Sheep raising | 100 | 76 | 76 | 80 | 76 |
| Beef raising | 100 | 77 | 88 | 83 | 84 |
| Cattle feeding | 2/100 | 1954-55<br>95 | | 1955-56<br>92 | |

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1/ Quantities of feed used in calculating the cost of feed follow: Per dozen eggs - 7 lbs. poultry ration; per lb. of broiler - 4½ lbs. chick starter, 1935-44; 4 lbs. chick starter, 1945-49; 3½ lbs. chick starter, 1950-52; 3¼ lbs. broiler mash, 1953-54; 3 lbs. broiler mash, 1955-56; per lb. of turkey - 5½ lbs. poultry ration before 1950; 4-3/4 lbs. 1950-56; per 100 lbs. hogs - 7½ bu. corn plus 20 lbs. soybean meal; per 100 lbs. milk or 4 lbs. butterfat - 28 lbs. concentrates plus 110 lbs. hay, 1937-41; 31 lbs. concentrates plus 110 lbs. hay, 1942-56; per 100 lbs. beef cattle - 3 bu. corn plus 600 lbs. hay; per 100 lbs. sheep and lambs - 2 bu. corn plus 1,500 lbs. hay. Value of hay in Iowa and Minnesota was used for butterfat. Assumed 19 lbs. wool produced for each 100 lbs. sheep and lamb produced since 1951 and 20 lbs. before 1952. The quantity of hay for milk cows, beef cattle, and sheep includes an allowance for silage and pasture. Feed nutrients from pasture assumed to cost a fourth as much as nutrients from hay. Cattle feeding returns are based on table 2, Livestock and Meat Situation, AMS, August 17, 1956, which is based on Corn Belt experience.

2/ 1920-52 average.

Returns per $1.00 of feed cost from cattle feeding in the 1955-56 season were 8 percent below the longtime average and a little lower than in the preceding season. The average price paid by farmers on October 15, 1956, for feeders and stockers was about 5 percent lower than on the same date in 1955. Returns for the season, however, will depend on the price of fat cattle next spring and summer.

## SEED

The index of prices paid by farmers for seed was about 4 percent lower in mid-September than a year earlier and about 10 percent below the 1947-49 average. However, retail prices of seed are about 5 percent higher this fall than they were last spring. Of the 17 grass, legume, and grain seeds for which spring and fall prices are available, only two - common ryegrass and Ladino clover - were lower in September than they were in May. Prices of timothy and smooth brome advanced as much as 44 percent, while prices of Kentucky bluegrass, orchard grass, alsike clover, and alfalfa rose 8 to 17 percent from May to September.

Compared with 1949-52, September prices were 55 percent lower for Ladino clover, 48 percent lower for improved varieties of alfalfa, 15 percent lower for alsike clover, 5 percent lower for red clover, and 40 percent higher for crested wheatgrass. Prices of seed grains ranged from about the same for winter wheat to 14 percent lower for winter barley.

It is expected that seed prices will average somewhat higher in 1957 than in 1956. The general trend in seed prices has been upward since last spring. The demand for some grass and legume seeds is expected to be higher, partly because participation in the soil bank is expected to stimulate their use. Supplies are lower than they were a year ago, mainly because production in 1956 was substantially reduced by drought. However, except for grasses suitable for the Great Plains, supplies are expected to be generally adequate in 1957, with prices averaging somewhat below the 1947-49 level.

## FERTILIZER

Average prices paid by farmers for fertilizer during 1956 remained at about the 1955 level. This level was about 6 percent above prices paid in 1947-49, but somewhat lower than the prices paid in 1951, 1952, or 1953. Plant nutrient content has continued to rise so that the real cost of elements responsible for increases in yields has declined more than is indicated above. Annual consumption of fertilizer in terms of gross weight has declined slightly in the last 2 years, but the quantity of principal nutrients consumed has continued to rise.

Available supplies reached an all-time high level this year. Wholesale prices reported for most nitrogenous fertilizers were lower than for the previous year. Some seasonal changes in prices of these materials occurred. They reflected an effort to encourage summer and fall movement, thus reducing the cost of storage for the manufacturer and relieving congestion in storage and transit. Early in the season, the wholesale price of anhydrous ammonia was $85 a ton. This was reduced to $72 for August but increased to $75 for October. This price is expected to continue until about the first of the year, at which time some increase can be expected. A reduction of $10 a ton was announced for sulphate of ammonia in May. Lower prices for imported Chilean nitrate of soda were announced in October.

Consumption of plant nutrients is nearly 70 percent above the 1947-49 average but the rise has been much greater for nitrogen (N) and potash ($K_2O$) than for phosphate ($P_2O_5$). For 1955, the index of nitrogen consumption was 226, for potash 194, and for phosphate 125, with 1947-49=100. This reflects recognition of the higher yield response to nitrogen and potash and the differences in prices of the 3 principal nutrients. Although nitrogen costs more per pound than either of the other nutrients, response to higher applications has generally been greater, and the price per pound of nitrogen is now less relative to the price of the other nutrients than formerly. This changed relationship has been brought about by the increased use of high analysis nitrogen solutions for both direct application and for use in making mixed fertilizers, and by the expanded use of anhydrous ammonia. New developments in fertilizer technology have reduced the cost of these materials (fig. 5). The price of potash per pound has generally been materially lower than that of other nutrients because its source material is high in $K_2O$ content. The favorable cost position of fertilizers relative

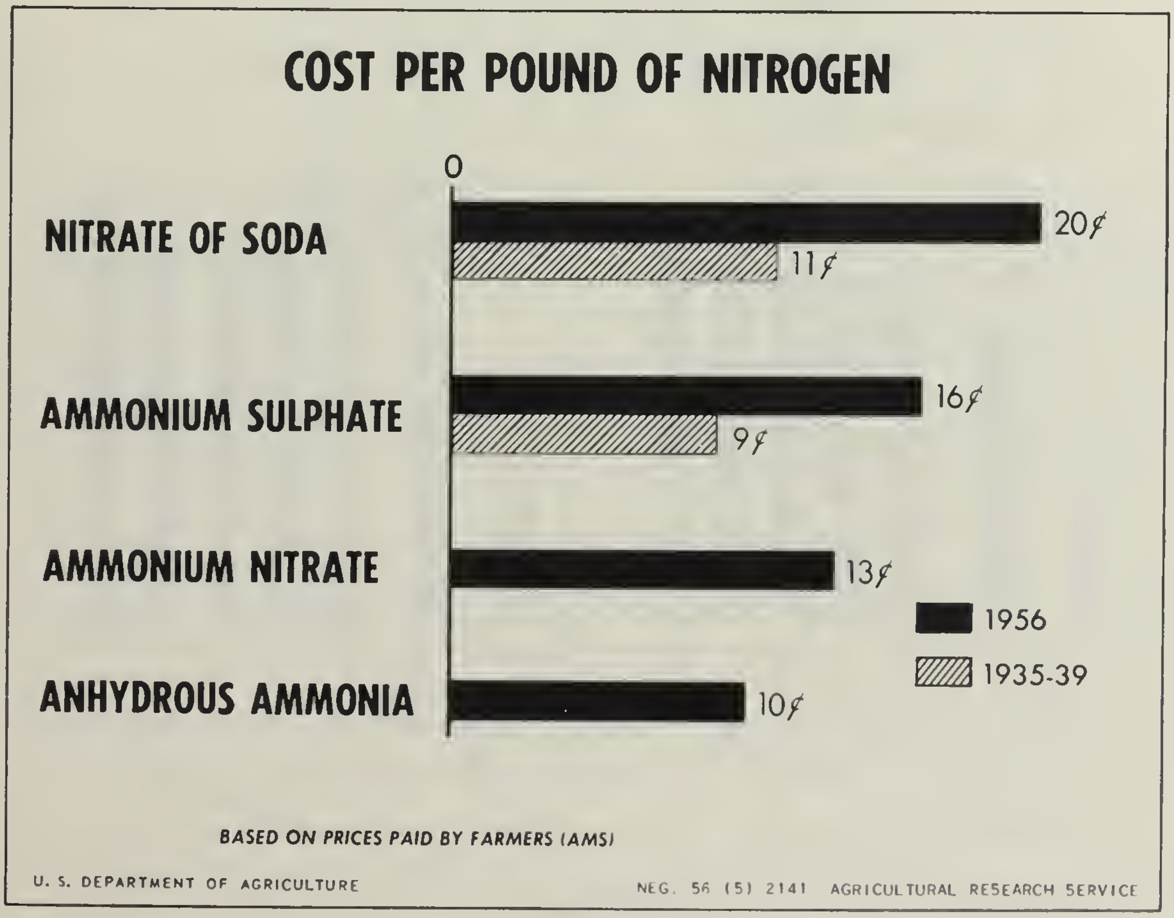


Figure 5

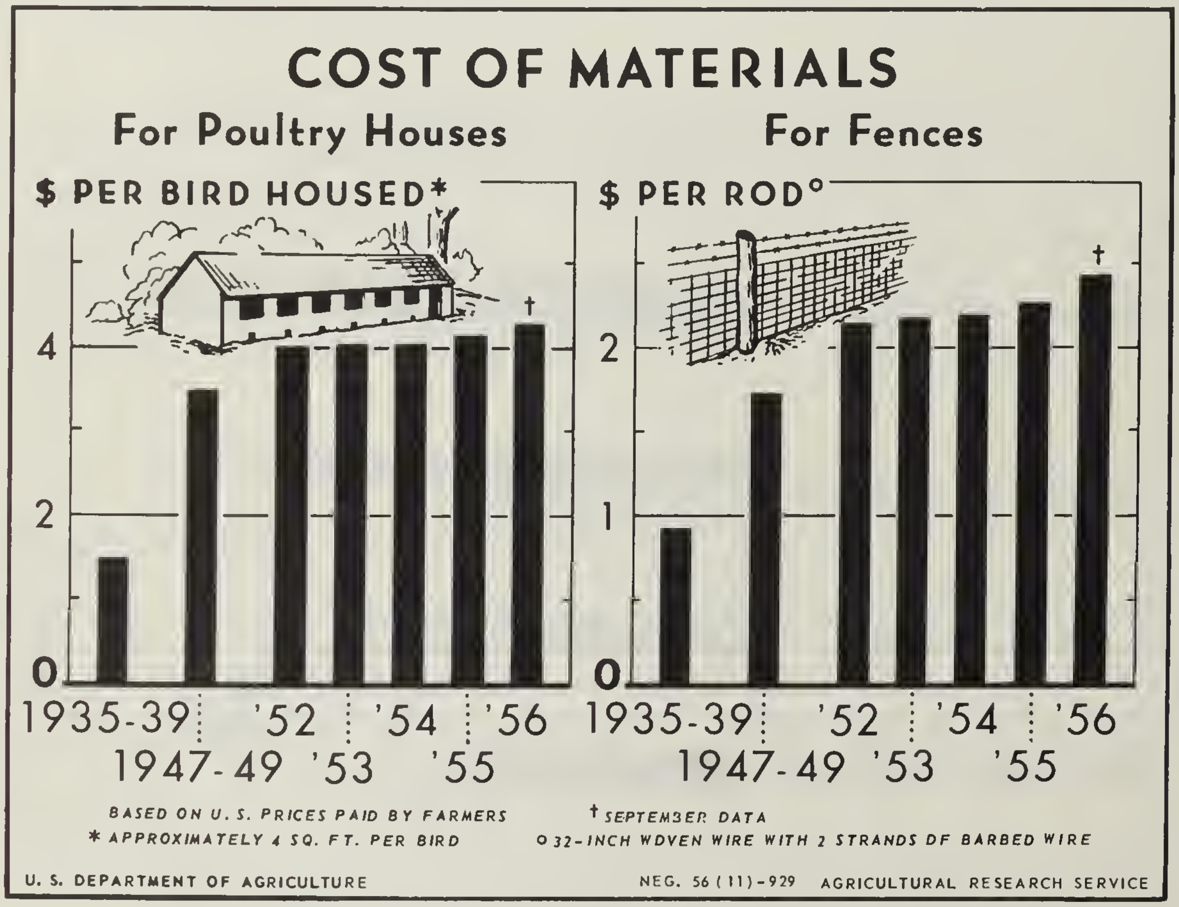
to that of other production costs is expected to continue for the next few years. There are some indications that fertilizer may compete with other inputs for the farmers' available operating funds even more strongly than at present.

## BUILDING MATERIALS

Prices of building and fencing materials used by farmers were nearly 4 percent higher in mid-September than a year earlier and more than a fourth higher than in 1947-49. They have increased about 162 percent since 1935-39 in contrast to an increase of 118 percent in the prices received by farmers for products sold.

Cement and composition roofing are both more than 5 percent above year-ago levels while prices of framing lumber are up about 2 percent. Prices of most items of building and fencing materials have advanced in recent months.

The total cost of materials for a typical poultryhouse has risen 2 percent in the last year and 23 percent since 1947-49. The cost of fencing materials has increased by 5 percent since September 1955 and by 35 percent since 1947-49 (fig. 6).



BASED ON U. S. PRICES PAID BY FARMERS

* APPROXIMATELY 4 SQ. FT. PER BIRD

† SEPTEMBER DATA

° 32-INCH WOVEN WIRE WITH 2 STRANDS OF BARBED WIRE

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Figure 6

## FARM SUPPLIES

Farm supply prices have risen an average of 4 percent in the last 12 months. They are now 17 percent higher than in 1947-49 and 97 percent higher than in 1935-39. This category includes pesticides, baler twine and wire, binder twine, bale ties, containers, small tools, and miscellaneous items.

### Pesticides

Prices paid by farmers for pesticides were slightly lower in 1956 than they were a year earlier. However, farmers apparently used about 12 percent more pesticides this year than in 1955. As a result, their expenditures for such materials are appreciably higher. Preliminary reports indicate that the use of calcium arsenate, DDT, and BHC (benzenehexachloride) and a number of other materials increased considerably from 1955 to 1956.

Since 1950, prices of BHC and DDT have declined about two-thirds and one-half, respectively, while prices of copper sulfate have risen about 60 percent. These price changes have had differing effects on farm costs. For example, cotton farmers, who use large quantities of BHC and relatively little copper sulfate benefited by these price changes but potato growers in areas where large quantities of copper sulfate are used did not benefit.

## FARM REAL ESTATE

### Value per Acre

The average value of farm real estate per acre continued to advance during the first half of 1956. Increases of from 2 to 4 percent were common during the 4 months ended July 1 throughout the eastern half of the country as well as along the Pacific coast. Values were largely unchanged in the central Corn Belt, Northern Plains, and central and southern portions of the Mountain region. The national increase, which amounted to about 1 percent, raised farm real estate values to a new high. At the same time, new high levels were recorded in 29 States scattered throughout the country.

At midyear, farm real estate values were higher than a year earlier in all farm production regions, except the Northern Plains (table 8). Nationally, the increase was 3 percent. Largest increases (8 to 9 percent) were reported for the Southeast and the Delta States. Advances of 5 to 6 percent were indicated for the Northeast, Lake States, and Pacific regions. Changes by States ranged from a 15 percent increase in Florida to a 5 percent decrease in Colorado. Declines were registered in only 2 other States - Nebraska and Kentucky.

Thus, land values continued to rise from late 1953 through mid-1956, despite the general decline in farm income during this period. Realized

Table 8.- Farm real estate: Index numbers of average value per acre, by farm production regions, July 1956 with comparisons

| Farm production region | March 1 | | | | July 1 | | Change July 1955 to July 1956 |
|---|---|---|---|---|---|---|---|
| | 1953 | 1954 | 1955 | 1956 | 1955 | 1956 | |
| | Index numbers (1947-49=100) | | | | | | Percent |
| Northeast | 122 | 121 | 123 | 130 | 125 | 131 | +5 |
| Corn Belt | 134 | 132 | 139 | 144 | 142 | 146 | +3 |
| Lake States | 127 | 122 | 127 | 135 | 130 | 136 | +5 |
| Appalachian | 129 | 123 | 126 | 130 | 128 | 133 | +4 |
| Southeast | 128 | 129 | 132 | 141 | 133 | 145 | +9 |
| Delta States | 131 | 129 | 132 | 140 | 133 | 144 | +8 |
| Southern Plains | 133 | 132 | 137 | 139 | 140 | 142 | +1 |
| Northern Plains | 135 | 129 | 133 | 135 | 136 | 135 | -1 |
| Mountain | 136 | 134 | 136 | 138 | 137 | 139 | +1 |
| Pacific | 127 | 124 | 130 | 137 | 131 | 139 | +6 |
| United States | 132 | 128 | 133 | 138 | 136 | 140 | +3 |

net farm income for 1955 was 18 percent below 1953, although some increase over the 1955 level is expected for this year. Land values in mid-1956 were 9 percent above the level of early 1954. During the last 40 years there has been no period of similar length in which land values increased while farm income was declining.

Some of the forces responsible for this upward trend in farm real estate values include the attitudes of people about farmland as a long-term investment, the costly improvements that have been made in recent years such as adding lime and providing facilities for drainage and irrigation, the demand from farm operators for additional land to utilize more fully their time and machinery, the strong demand for part-time farms and rural residences, the dispersal of industry, the favorable outlook for timber production, and the favorable outlook for the general economy.

The enlargement of farms is reflected in census data which show that between 1950 and 1954 the average size of farms increased by 12 percent, while the number of farms declined by 11 percent. The largest proportion of farmers who left farming in this period did so voluntarily, and without financial loss. This was made possible by favorable nonfarm employment opportunities which arose because of the dispersal of industry and high levels of employment and was assisted by the demand for land to enlarge farm operating units. The farm-enlargement process has continued since 1954, according to sales data collected each March. The proportion of tracts of land sold to become part of another farm after sale increased by 14 percent from 1954 to 1956 and represented a third of all sales of farmland in the year ended March 1, 1956.

An October 1955 survey, which was designed to determine the factors that are helping to sustain land values, revealed that many people consider farmland to be a safe long-term investment. They believe that a growing population on a limited area of land will result in steadily rising land values as the need for food and space continues to expand. Many may not realize fully, however, that much of our increased food requirements 3 to 5 years hence can be met without much, if any, increase in annual farm output. Although farm output may need to be increased by a fourth in the next 20 years, the main problem may well be one of making needed shifts in production rather than of attaining the desired general level of output.

Another attitude reflected in the survey was that many operators of small farms would find it difficult to stay in business in the present highly competitive situation unless they can expand their acreages.

## Value per Farm

The average value of real estate per farm varies widely by States - from less than $10,000 to $40,000 and upward (fig. 7). Differences in average size of farms as well as in value per acre are reflected in these figures. The national average of about $21,500 per farm in 1956 compares with $5,500 in 1940. Thus the average farm without livestock and equipment costs nearly 4 times as much now as it did in 1940.

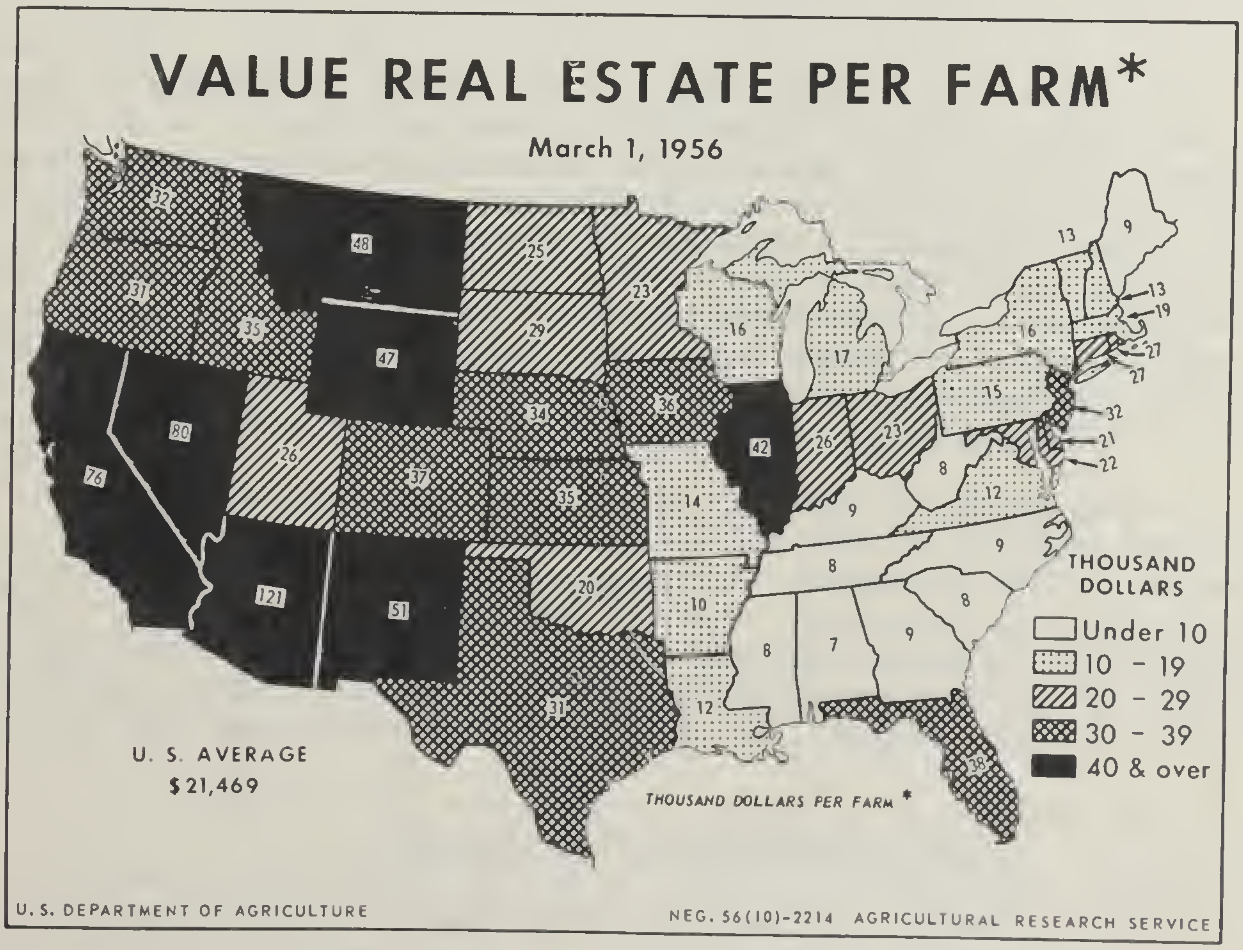

Figure 7

## INTEREST, TAXES, AND INSURANCE

### Farm-Mortgage Interest

Total farm-mortgage interest payable in 1956 is estimated at $448 million, about 9 percent above the $410 million that was payable in 1955. The increase in interest charges is due to an increase in outstanding farm-mortgage debt and to higher interest rates on new farm-mortgage loans.

Interest rates on new farm mortgage loans are now substantially above a year ago. This year 7 of the 12 Federal land banks increased rates by one-half of a percentage point. As a result, 3 land banks now charge 5.0 percent, 5 charge 4.5 percent, and only 4 continue the 4.0 percent rate. The rise in the land-bank rates on farm mortgages reflects higher yields on Consolidated Federal Farm Loan bonds. Representative issues of these bonds yielded 3.75 percent in September 1956 as compared with 3.00 percent a year earlier.

Farm-mortgage (real estate) debt is continuing to increase in 1956. In the first half of the year, the number of farm mortgages recorded was 8 percent less than in the first half of 1955, but the average size was up 11 percent, and the total amount recorded was up 2 percent. Total farm-mortgage debt may reach $9.8 billion by the end of the year, which compares with $9.0 billion at the beginning of 1956 and $5.6 billion on January 1, 1950.

New farm-mortgage loans made by life insurance companies are reported to carry rates that are one-half of a percentage point or more above last year's rates. Basic rates of the major companies in this field are reported generally at 5.0 percent in the fourth quarter of 1956. The increased rates of insurance companies and other private lenders reflect higher yields on alternative investments. For example, in September 1956, Aaa corporate bonds yielded 3.56 percent as compared with 3.13 percent a year earlier, and the average rate on new issues of U. S. Government 3-month bills in September 1956 was 2.850 percent, which compares with 2.086 percent in September 1955.

Looking ahead, it appears that farm-mortgage debt and interest charges may continue to rise for several years. An important factor is the increasing capital investment in farming which requires a net increase in long-term mortgage financing. The cost and terms of farm-mortgage loans will reflect the general interest-rate pattern. Changes in the yields on Government and corporate securities and other alternative investments will affect the cost and availability of funds for farm-mortgage lending.

### Interest on Non-Real-Estate Debt

Interest payments by farmers on their non-real-estate loans will probably be 12 to 15 percent greater in 1956 than in 1955. For the year 1956, the amount of non-real-estate debt on which farmers pay interest will average about 6 percent above the amount in 1955, and the rates of interest paid on such loans appear to have risen from one-fourth to one-half of a percentage point per annum.

The increase in interest rates charged farmers on non-real-estate loans is a phase of the tighter situation that has prevailed in all money markets during 1956. The average cost (including commissions to dealers) of all Federal Intermediate Credit Bank debentures issued during fiscal 1956 was 3.08 percent per annum, compared with 1.69 percent for those issued during fiscal 1955. The cost was still higher (3.85 percent) for the latest issue of such debentures, which were dated and delivered November 1, 1956. These increases in the cost of funds have made it necessary for the Federal Intermediate Credit banks to increase their rates on loans discounted for the production credit associations and other rediscounting institutions, and the latter, in turn, are finding it necessary to increase the interest rates that they charge farmers for loans. Interest rates charged by country banks are not connected as closely to rates in the central money markets as are those charged by production credit associations but it is probable that they also have risen somewhat during the last year.

At mid-1956, the non-real-estate loans to farmers held by reporting lending agencies (excluding loans of the Commodity Credit Corporation) were about 4 percent greater than a year earlier. The largest increase for the year (11.7 percent) occurred in the Pacific region. Such loans decreased about 3 percent in the Southeast but they increased in all other regions by percentages that ranged from 1.7 percent in the Northern Plains to 6.9 percent in the Mountain States.

Indications are that the volume of non-real-estate loans to farmers will be little, if any, greater in 1957 than in 1956. Interest rates for short-term securities in the central money markets are at the highest level in about a quarter of a century. However, the rates charged farmers on non-real-estate loans do not yet reflect all of the increase that may be expected if rates in the central money markets remain at present levels. For this reason, the interest paid by farmers on non-real-estate loans may increase again in 1957, even though the amount of such loans fails to increase.

## Property Taxes

Total taxes levied on farm real and personal property in the United States in 1956, payable largely in 1957, are expected to be about $1,204 million, or 5 percent above a year earlier.

Farm real estate taxes estimated to be paid in 1956 total $927 million. Payments in 1957 are expected to be about $979 million. The amount paid in 1956 was about 31 percent greater than in 1950 and more than double the payments of 1945. It is anticipated that payments in 1957 will be about 39 percent greater than in 1950.

Taxes paid per acre on farm real estate in 1956 average $0.87. Based on the average for the period 1910-14, the index of taxes paid per acre was 422 in 1956. When compared with average payments for the period 1947-49, the index was 156. For the year 1957, the indexes will probably be about 445 and 165, respectively.

For 1956, taxes paid on farm personal property will amount to $219 million, up approximately $2.5 million from 1955. In 1957, they probably will increase about 3 percent. It is expected that these levies will increase to about $225 million in 1957. These 1957 payments will be some 80 percent higher than the average of 1947-49.

Generally, taxes paid in 1957 will be based on assessments as of January 1, 1956. Although data are not yet available, assessed values per head of livestock on that date are expected to remain virtually unchanged from a year earlier. Total valuations probably will be slightly higher because of the increase in livestock numbers during 1955. As a result, it is anticipated that the taxes paid on personal property will increase in proportion to changes in the tax rate.

In general, the cause of the increase in the tax levies has been the increased costs of local governmental services, especially for education and highways.

On a typical 160-acre hog-dairy farm in the Corn Belt, taxes payable on farm real estate were estimated to be $367 in 1955 and $380 in 1956. It is expected that these taxes will increase to $405 in 1957. Personal property tax payments amounted to $108 on such farms in both 1955 and 1956. An increase to about $113 is expected in 1957.

## Insurance

Expenditures by farmers for property insurance in 1956 will probably be higher than in any previous year. The insurance carried by farm mutual fire insurance companies increased by 6 percent in 1954, and 5 percent in 1955. Farmers who renewed their policies in 1956 will generally increase the amount of their coverage because many have been underinsured. The total cost (losses plus operating expenses) for this insurance was 24.4 cents for $100 insurance in 1954 and 25.4 cents in 1955. The increased assessments paid by farmers to these companies have been due primarily to the increase in the amount of insurance carried but a part of the increase resulted from the addition of coverage against windstorm losses.

Indemnities paid to farmers during 1956 by the Federal Crop Insurance Corporation are again expected to exceed the premiums collected. The chief cause of loss was extreme drought in parts of the Great Plains and in the western Corn Belt.

Farmers bought a record amount of insurance against hail damage to growing crops in 1956 from private companies and 3 State hail departments. Because of widespread damage, payments to farmers for crop losses will nearly equal the total cost of premiums. The net cost to farmers for this insurance (premiums minus loss payments) in 1957 will probably be above average because of the large volume and some increases in premium rates.

## COSTS AND RETURNS ON 4 SELECTED TYPES OF FARMS IN 1956

Realized net income for all farm operators as a group in the United States is slightly higher in 1956 than in 1955. In some areas, however, where drought, other crop conditions, and prices were relatively unfavorable in 1956, incomes are lower.

A summary of changes in costs and returns on 4 selected types of farms in widely separated areas is shown in table 9. These 4 types of farms are not intended to represent a cross section of all farms in the country. But they do illustrate the varying effects of changes in prices and weather on net incomes of important groups of farmers. Of the types of farms analyzed, Central Northeast dairy and Corn Belt hog-dairy farms will have about the same incomes in 1956 as in 1955. Southern Piedmont cotton farmers, and Southern Plains winter wheat farmers will have lower incomes. The prospective reduction in income on these cotton and wheat farms results from reduced crop yields and increases in prices paid relative to prices received.

### Dairy Farms, Central Northeast

Preliminary estimates indicate that net farm incomes in 1956 on Northeastern dairy farms will average about $4,400, or approximately the same as in 1955. However, if milk production on these farms holds up as well this fall as it did a year ago, net incomes may exceed those in 1955. Soil bank payments will be negligible on these farms in 1956.

Net farm incomes on these farms are expected to average about 13 percent higher in 1956 than in 1947-49 despite less favorable prices this year. Net production per farm is now about a third higher than in 1947-49. This increase stems from increased production per cow as well as from farm consolidations resulting in more cows and more acres per farm.

### Hog-Dairy Farms, Corn Belt

Net farm incomes on hog-dairy farms in the Corn Belt are expected to average about $4,300 in 1956, or 3 percent more than in 1955. Included in this figure are soil bank payments tentatively estimated to be $60 per farm. The sharp increase in hog prices in the latter half of the year occurred too late to offset the low prices earlier in the year so that the average price received for hogs will be about 5 percent below the 1955 average. The lower price of hogs coupled with lower production resulted in a decline in gross income from hogs of approximately 7 percent. However, increased emphasis on dairying on these farms, together with slightly higher prices for butterfat in 1956, will result in an increase in gross income from this source of nearly 10 percent. This probably will be sufficient to bring about a slight increase in net farm income on these farms.

Net farm incomes in 1956 on hog-dairy farms are expected to be about 23 percent below the 1947-49 average, despite an increase of 23 percent in net farm production. Preliminary estimates indicate that prices paid for goods and services used in production in 1956 will average about 15 percent

Table 9.- Prospective costs and returns, selected types of farms, 1956 with comparisons

| Type of farm | Unit | Average 1947-49 | Percentage of 1947-49 |  |
|---|---|---|---|---|
|  |  |  | 1955 | 1956 1/ |
| Dairy farms, Central Northeast: |  |  |  |  |
| Gross farm income | Dollar | 8,822 | 115 | 116 |
| Operating expense | do. | 4,930 | 115 | 119 |
| Net farm income | do. | 3,892 | 114 | 113 |
| Cows, 2 years and over | Number | 21.9 | 116 | 124 |
| Prices paid | Index | 100 | 107 | 109 |
| Prices received | do. | 100 | 91 | 93 |
| Net farm production | do. | 100 | 134 | 132 |
| Hog-dairy farms, Corn Belt: |  |  |  |  |
| Gross farm income | Dollar | 10,191 | 99 | 100 |
| Operating expense | do. | 4,552 | 130 | 129 |
| Net farm income | do. | 5,639 | 74 | 77 |
| Pork produced | 100 pounds | 208.2 | 122 | 115 |
| Prices paid | Index | 100 | 113 | 115 |
| Prices received | do. | 100 | 77 | 76 |
| Net farm production | do. | 100 | 122 | 123 |
| Cotton farms, Southern Piedmont: |  |  |  |  |
| Gross farm income | Dollar | 3,581 | 143 | 112 |
| Operating expense | do. | 2,016 | 144 | 125 |
| Net farm income | do. | 1,565 | 143 | 94 |
| Cotton | Acre | 18.5 | 95 | 91 |
| Other crops | do. | 42.5 | 100 | 99 |
| Prices paid | Index | 100 | 118 | 111 |
| Prices received | do. | 100 | 102 | 97 |
| Net farm production | do. | 100 | 145 | 118 |
| Winter wheat farms, Southern Plains: |  |  |  |  |
| Gross farm income | Dollar | 14,186 | 72 | 68 |
| Operating expense | do. | 4,169 | 118 | 116 |
| Net farm income | do. | 10,017 | 53 | 48 |
| Wheat | Acre | 300 | 68 | 74 |
| Other crops | do. | 50 | 260 | 214 |
| Fallow | do. | 167 | 96 | 98 |
| Prices paid | Index | 100 | 120 | 121 |
| Prices received | do. | 100 | 93 | 86 |
| Net farm production | do. | 100 | 80 | 80 |

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1/ Tentative October estimates.

higher than in 1947-49 while prices received will average approximately 24 percent lower. If current prices continue for the rest of the year, the price of butterfat probably will average about 13 percent lower and the price of hogs more than a third lower than in 1947-49.

## Cotton Farms, Southern Piedmont

If prices received for lint and cottonseed on October 15 continue through December, net farm incomes of Southern Piedmont cotton farmers including about $20 from the Soil Bank probably will average around $1,470, about 35 percent below the unusually favorable year of 1955. This estimated decline in income is due mainly to lower yields. However, prices received for lint and seed also are averaging slightly lower in 1956. The yield of cotton is slightly above the longtime trend for the area, even though it is much below the 1955 yield. Yields of corn and oats were slightly above the longtime trend but the yield of wheat was lower.

Net farm production in 1956 is expected to be below 1955 but probably it will average about 18 percent above 1947-49. There has been an upward trend in net production per farm as a result of an increase in average size of farm and higher yields per acre.

If the average price received on October 15 for cotton continues for the rest of 1956, the index of prices received (1947-49=100) will drop from 102 to 97 in 1956. The index of prices paid will drop from 118 to 111. However, this index of prices paid on these farms was unusually high in 1955 because of record high yields of cotton and the resulting higher returns to cropper labor.

## Winter Wheat Farms, Southern Plains

Net farm incomes on winter wheat farms in the Southern Plains probably will average about 9 percent lower in 1956 than in 1955. Most of this decline will result from lower yields of crops other than wheat and from lower prices received for products sold. The reduction in incomes would have been greater except for the relatively good yields of wheat. The yield of wheat in 1956 was slightly better than in 1955 and was the highest since 1952. Apparently the 1956 crop was largely made before the onslaught of drought. For these farms soil bank payments in 1956 are expected to average about $85 per farm.

Production of sorghum both for grain and for forage and production of hay and pasture was down about a third from 1955. The tight feed supply in this area has made it necessary for farmers to reduce their numbers of roughage-consuming livestock by about 10 percent. In addition, the 1956 drought has significantly lowered the prospects for the 1957 wheat crop.

Prices received by wheat farmers in the Southern Plains are expected to average about 8 percent lower in 1956 than in 1955. This contrasts with about a 1-percent increase in prices paid for the goods and services used in production. Prices paid for commercial feed, seed, and some supplies were lower but prices paid for farm machinery and wage rates were higher.

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